Challenging Discrete Approaches to Secondary-Predicate Constructions

Towards a Non-discrete Account of Resultative, Depictive and Qualifying Constructions in English

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Acknowledgements

This project* was inspired by Edgar W. Schneider's 1997 article "*As* as 'is': is *as* 'is'", which points out many of the questions raised by secondary-predicate constructions in English and has paved the way for my research into the subtleties and complexities of this intriguing aspect of English grammar. Prof. Schneider's motivating remarks on my *Zulassungsarbeit* and on two talks given in his research colloquium have encouraged me to broaden the theoretical and empirical basis of my work, which has finally resulted in the present dissertation.

As is frequently the case with such large-scale projects, work on this dissertation has quickly taken on a life of its own. While my *Zulassungsarbeit* constituted a critique of small-clause analysis within a descriptive grammatical paradigm, the present book has become a much more comprehensive critique of discrete grammatical approaches in general and an attempt to tackle secondary-predicate constructions from the new angle of non-discrete syntax.

A project of this size is not possible without the help of other people. Julia Hofmann (University of Oxford, England), Marguerita O'Neill (Institute of Technology Tralee, Ireland), Voicu Popescu (Purdue University, USA) and Christoph Saurenbach (London School of Economics, England) have my gratitude for helping me conduct evaluation tests with native speakers of English. I would also like to thank Adrienne Bambach, Scott Brunstetter, Roger Miller and Ben Mui for giving their views on the relative acceptability or unacceptability of quite a large number of English sentences. I am particularly grateful to Augustus Cavanna, Jamie Kohen and Alison Thielecke, *Lektoren* at the University of Regensburg, who volunteered for extended interviews on the meaning of functionally related sentences.

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Thanks also to those people who were continually suprised that anyone could have such a big interest in 'small' clauses. I must admit that I was surprised myself that my interest in secondary-predicate constructions in particular and non-discrete syntax in general has not waned in the nearly two years I have devoted to the *Zulassungsarbeit* and this dissertation, but has actually grown into something like fascination. Even though it is still early days, I am sure that the non-discrete perspective will have a lot to contribute to enhancing our understanding of the complexities of syntax and semantics.

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1. Introduction

In a series of articles in the early 1970s, the syntactician Georgia M. Green pointed to an intriguing verbal complementation pattern that had been largely ignored by the linguistic community up to that point (1970, 1972, 1973). The pattern follows the formula given in (1)[1] — where the X ranges over the variables noun (N), adjective (A), and preposition (P) — and can be illustrated by the sentences in (2). One interesting property of this construction is the fact that the second postverbal phrase XP is predicated of the first postverbal phrase NP_2.[2] Without intending to subscribe to any particular theory at the moment, I will apply the widely-used term 'secondary predicate' to the predicative phrase XP and will call syntactic patterns including such a phrase 'secondary-predicate constructions'.

(1) NP_1 V NP_2 XP

(2) a. Mary considers John *a fool*.
b. Mary considers him *silly*.
c. Mary considers him *beneath contempt*.

What Green found even more noteworthy about (1) is the ability of this structure to code at least three different semantic relationships (1970: 275-7, 1973: 262-7). In (3a), John drank his coffee and the coffee was hot at the same time, while in (3b) the table became clean only as a result of the waitress's wiping it. It is more difficult to give a paraphrase for (3c) — in fact, Green suggested that a "Linguistic Hero Medal" should be awarded to anyone who could come up with a good solution (1970: 270). What is intuitively clear at least is that John is a fool only in Mary's subjective view of reality.

(3) a. John drank his coffee *hot*.[3]
b. The waitress wiped the table *clean*.
c. Mary considers John *a fool*.

Green hoped that future progress in syntactic theory would find a possibility to capture the predicative relation between the two postverbal phrases and to explain how the same syntactic formula can convey such diverse meaning relationships (1970: 279).

The research done on secondary-predicate constructions in the wake of Green's articles has not borne out this optimism, though. The common denominator syntacticians have been able to reach on these constructions in the last three decades is excruciatingly small and does

[1] The subscripts on the NPs do not have any theoretical significance but merely serve as notational conveniences to tell them apart.
[2] Whenever I want to highlight the predicative relationship between NP_2 and XP, I adopt the convention of italicising the secondary predicate and underlining its predication subject.
[3] Since one tends to read the present-tense version of this sentence (*John drinks his coffee hot*) in its habitual sense, illustrations of dynamic sentences will, as a rule, be given in the past tense, in which the habitual/iterative reading is less dominant.

not go much beyond the few tentative suggestions already advanced by Green. It is not a matter of much dispute, for example, that the secondary predicate cannot be sensibly analysed as a postnominal modifier in most cases. In contrast to the AP in *The waitress scrubbed something* ***very dirty***, the secondary predicate does not seem to be a constituent of the postverbal NP in (3b), as a few standard syntactic tests quickly reveal. It is, for instance, not possible to transpose the NP_2 XP-string within the sentence (4a) (Green 1970: 273, 1973: 260), nor to paraphrase the secondary predicate with a restrictive relative clause (4b) (Green 1970: 273, 1973: 259). Neither does the pronominalisation of the postverbal NP affect the secondary predicate (4c) (Rothstein 2000: 244-5). This behaviour contrasts sharply with that of post-modified NPs, as the primed sentences illustrate.

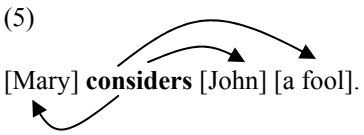
(4) a. ***The table clean** was wiped.[4]
a'. **Something very dirty** was scrubbed.
b. !The waitress wiped the table **that was clean**.
b'. The waitress scrubbed something **that was very dirty**.
c. The waitress wiped **it clean**.
c'. The waitress scrubbed **it** (*very dirty).

Another potential analysis that can be safely dismissed from the start is the treatment of NP_2 XP-strings as some sort of idiomatic expressions. As Green already noted, none of the words in sentences such as those presented in (3) has any unusual meaning that it does not have in other, non-idiomatic expressions (1970: 217, 1973: 258).

Beyond this meagre and unspectacular consensus, almost every other opinion ventured on secondary-predicate constructions has occasioned — to say the least — lively debate. There are basically four competing lines of analysis that have gained some currency in the syntactic literature; these analyses differ both in their hypotheses as to how many syntactic constituents must be assumed for the construction and in their views on which constituents belong closer together syntactically.

The traditional analysis, which is provided in most descriptive grammars, suggests that verbs such as *consider* select three syntactic complements — a subject, a direct object, and what is here called a secondary predicate (5) (e.g. Biber *et al.* 1999: 130; Huddleston and Pullum 2002: 53; Quirk *et al.* 1985: 53):

(5)

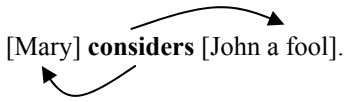


[4] An asterisk characterises a sentence as ungrammatical; various degrees of acceptability are indicated by one or two question marks. An exclamation mark implies that the sentence is grammatical but does not communicate the intended meaning.

While a ternary analysis does not cause major difficulties with verbs such as *give*, which are standardly assumed to require a subject, an indirect object and a direct object (cf. [*John*] *gave* [*Mary*] [*a cake*]), the situation is less straightforward with *consider* because the proposal sketched above sidesteps the issue why *a fool* is predicated of *John* and thus fails to account for one of the most distinctive characteristics of secondary-predicate constructions.

Due to this serious analytical deficiency of the traditional account, a radically different analysis has quickly gained ground in the syntactic literature from the early 1980s onward. Since the relationship between the two postverbal elements is one of predication, and predication is first of all a property of clauses, *John* and *a fool* could be assumed to constitute the subject and predicate of a verbless (or 'small') clause (e.g. Haegeman and Guéron 1999: 108-9; Stowell 1983: 297-9). In this view, *consider* is a binary verb, taking *Mary* and the proposition *John a fool* as its complements:

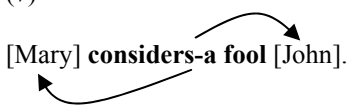
(6)



While the analysis given in (6) solves the problem of the additional subject/predicate relationship quite neatly, it works on the assumption that the postverbal NP_2 XP-string forms a syntactic unit — an assumption that seems to be counter-intuitive because this string does not contain any of the formal characteristics standardly associated with a subordinate clause, such as a complementiser before or a verb between the two postverbal phrases. Proponents of a clausal analysis must therefore employ considerable syntactic ingenuity to prove that the NP_2 XP-string does in fact act as a clausal constituent.

In view of these difficulties, another binary analysis has been put forward in the literature devoted to secondary-predicate constructions. According to this proposal, the proper parsing of the sentence is that given in (7), where there is a discontinuous predicate *considers...a fool*, of which *John* is the direct object (e.g. Hoeksema 1991: 666; Larson 1988: 349):

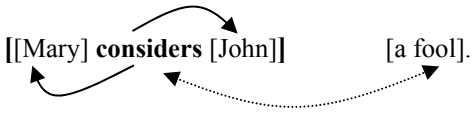
(7)



Since *a fool* is specified as part of a complex predicate selecting NP_2 as its direct object, the predicative relation between the two postverbal phrases does not pose the same problems here as in other analyses. What must be entered on the debit side of this hypothesis, however, is the fact that it cannot easily account for the surface position of the direct object between the two parts of the complex predicate.

The various shortcomings of the clausal and complex-predicate analyses have led some syntacticians to argue for a more sophisticated ternary analysis instead. These proposals form a rather heterogeneous set and can be subsumed under the label of 'Predication theory', a term used by Williams for his pioneering work in this direction (1980, 1983). Some predication theorists maintain that the secondary predicate is not a complement of the main verb, but is licensed by the syntactic complex consisting of the verb and its two arguments through a special grammatical mechanism.

(8)



All of the approaches outlined above are primarily concerned with the correct parsing of the syntactic formula given in (1). No matter which analysis one prefers, therefore, Green's central question as to how the same syntactic pattern can code three distinct semantic relationships has not even been touched on. While some syntacticians have remained remarkably silent about this issue, others have made various kinds of suggestions. The most popular procedure is to assign different syntactic structures to the sentences given in (3) along the lines of some complement/adjunct distinction. Such an approach is, however, subject to as wildly divergent opinions as is the proper analysis of the syntactic blueprint in (1) itself. The research done on the relationship between the syntax and the semantics of secondary-predicate constructions has thus not been able to substantially flesh out Green's early speculative suggestions:

> [S]ome interplay between target-structure conspiracies, syntactic properties of lexical items, real-world possibilities and nonobvious aspects of the meaning of lexical items serves to adjust the number of readings possible for any given sentence of this form. (1973: 268)

The present dissertation makes the rather strong claim that none of the analyses sketched in (5-8) can be sustained, and that the different semantics of secondary-predicate constructions cannot be explained by a complement/adjunct analysis or, for that matter, any other purely syntactic analysis. Following the spirit of some promising recent publications on syntactic theory (particularly Croft 2001 and Goldberg 1995), I aim to show that the quandary syntacticians find themselves in when tackling NP_2 XP-constructions results from a number of erroneous assumptions that lie at the core of contemporary syntactic theories working within what I call the 'discreteness' paradigm. Chapter 3 intends to reveal the largely implicit presuppositions discrete syntactic theories rely on, and to pit them against the fresh perspective offered by 'non-discrete' grammar, which suggests itself as a viable alternative.

The rest of part I is given over to a detailed criticism of the four discrete analyses of secondary-predicate constructions outlined above. Chapters 4 and 5 contain a thorough critique of the traditional ternary analysis and the small-clause account, respectively, while chapters 6 and 7 are devoted to relatively brief discussions of the more marginal complex-predicate and predication theories. After the 'challenge'-part of this book has illustrated that each of these analyses runs into major conceptual difficulties that are largely unresolvable with the machinery provided by mainstream syntactic theories, part II approaches the syntactic and semantic problems posed by secondary-predicate constructions from the theoretical angle of non-discrete grammar and shows that this framework opens promising new avenues of inquiry.

Before we delve into the details of secondary-predicate constructions, a few remarks on the empirical basis of my data are in order.

2. Data and methods

2.1 Data based on linguistic intuition

Studies which purport to explain syntactic phenomena must ultimately stand up to the evidence of actual language data. Such data can be obtained in various ways; the most convenient, direct, and unlimited source of information is certainly introspection, i.e. the construction and evaluation of examples on the basis of one's own linguistic intuition (Schneider 1988a: 156). The utility of this method is, of course, severely limited because it is based on subjective judgements[5], but introspection nevertheless remains an indispensable methodological tool because it also allows the inclusion of negative data (Kilby 1984: 5). If possible, one's own linguistic intuition should always be supplemented by and checked against the intuitions of other speakers. For the present study, I conducted interviews with several native speakers of English, in which they were asked to read individual sentences and to give their judgements on the grammaticality or acceptability of these sentences. The interviews did not only provide me with an opportunity to compare several individual intuitions, but also to discuss possible reasons for certain acceptability judgements (cf. Feagin 2002: 31; Schneider 1988a: 157-8).

For a broader and more representative empirical basis, I also conducted standardised tests with a relatively large number of native speakers of English in order to elicit judgements on a number of syntactic constructions. The results obtained allowed me to verify or falsify certain syntactic or semantic hypotheses that were hidden behind the sentences included in the tests (cf. Schneider 1988a: 158).[6] In contrast to the interviews, participants were not asked to consciously reflect on the linguistic material or to verbalise their intuitions, but to spontaneously select one of the given alternatives or to evaluate a sentence on the basis of their linguistic

[5] Since I am not a native speaker of English, I have double-checked all of my intuitions with those of native speakers.

[6] When participants had to evaluate sentences, they could choose between '+' (perfectly natural), '?' (doubtful) and '-' (totally unacceptable) (cf. Schneider 1988a: 172). To calibrate the relative degree of objection to a certain sentence, I used Schneider's 'Relative Objection Score' (ROS) (1988a: 172-3). Whenever an informant marked a sentence as totally unacceptable, this was counted as 1, and when he or she specified the sentence as doubtful, this was put down as 0.5. To get an illustrative numerical value, these numbers were added together and multiplied by 100; the result was then divided by the total number of informants (each ROS-value is based on the judgements of at least 30 informants). To interpret the resulting ROS-values, I use the following rule of thumb: a sentence with an ROS between 0 and 30 is interpreted as acceptable; an ROS between 31 and 50 is rated as doubtful (?), and a value between 51 and 70 as very doubtful (??). An ROS-value greater than 70 is taken as an indication that the sentence is ungrammatical (*). The decision to treat an ROS of up to 30 as still acceptable seems to be fairly tolerant, but had to be taken because informants tend to question even well-formed sentences when they are presented out of context. Many sentences that look slightly doubtful in isolation become fully acceptable when the right context is supplied, though. Not all evaluations given for sentences have been submitted to a larger number of informants; evaluations that are not followed by an ROS-value are based on interviews with at least two educated native speakers of English.

intuition. Such tests are a means of observing unconscious, performance-like linguistic behaviour; again, however, neither the sentences constructed by me or other syntacticians, nor the participants' reaction to such sentences in a test situation is particularly natural and authentic linguistic behaviour (Schneider 1988a: 158). To enhance the adequacy of syntactic models, the introspective methods outlined so far must consequently be complemented with data provided by computerised language corpora.

2.2 Data based on electronic corpora

The number of electronic corpora available to researchers and particularly their size have considerably increased in the last two decades. While the first computerised corpora of written present-day English, the *Brown University Standard Corpus of Present-Day American English* (published in 1964) and its somewhat later British counterpart, the *Lancaster-Oslo/Bergen Corpus* (published in 1978), were one-million-word collections of texts, the most advanced corpus to date, the British National Corpus (first published in 1995), comprises over 100 million words of contemporary British English. The BNC has been designed to be representative of modern British English and therefore includes texts from a large variety of genres and registers (Aston and Burnard 1998: 28). Several criteria were applied for the selection of texts, such as date of publication, medium of publication, and, particularly, the domain of a text (for details see Aston and Burnard 1998: 29-30). According to the domain-criterion, 75 per cent of the texts are informative, with roughly equal quantities coming from the fields of natural and pure science, applied science, social science, commerce and finance, world affairs, belief and thought, arts, and leisure. The remaining 25 per cent are composed of imaginative texts (Aston and Burnard 1998: 29). An outstanding characteristic of the BNC is that it also contains a very substantial spoken part, which makes up about 10 per cent (i.e., 10 million words) of the whole corpus. The spoken corpus has two components, unscripted informal conversation recorded by volunteers, and context-governed spoken texts such as recordings of political speeches or sports commentaries. The unscripted conversations include recordings of speakers of different ages, regions, and social classes (Aston and Burnard 1998: 31).

The BNC forms the main empirical basis of this dissertation and is used both for exemplification[7] and, more importantly, for quantifiable results. The use of a corpus for a study of syntactic phenomena is not a matter of course because corpus linguistics, at least outside the

[7] Quotations from the British National Corpus are indicated by a source code. The three positions before the space specify the extract that the example is part of, and the number following the space identifies the line of the example within the extract.

domain of variationist studies, has tended to focus on questions of morphology and lexis rather than syntax (Kennedy 1998: 8). While descriptive grammars have only recently begun to integrate corpus results into their accounts (notably Biber *et al.* 1999), generative grammar has, on the whole, remained unimpressed by progress in corpus and variation linguistics: "work on variation and on syntax has essentially gone on in parallel, undertaken by different practitioners, with different outlets for disseminating their results" (Henry 2002: 270; see also Cook and Newson 1996: 22). Contemporary generative linguistics concentrates on abstract linguistic universals and has often been dismissive of actually observed language data as documented in corpora. If syntacticians do not want to lose touch with linguistic reality, however, they have no alternative but to work out their syntactic hypotheses empirically. For a study of syntactic constructions like the ones under investigation here, it is thus vital to view theoretical considerations against the background of an objective database provided by a corpus. This is not the place to review all the advantages offered by modern language corpora, so I only want to point out briefly why a study of syntactic constructions can benefit from a corpus like the BNC.

It is a truism that language corpora provide a database of naturally occurring, authentic texts, but this authenticity is actually an invaluable tool when attempting to uncover the principles underlying the variation between functionally related syntactic constructions such as *I believe him to be a liar* and *I consider him a liar*. Both traditional grammars and contemporary generative studies base their observations almost exclusively on a small number of sentences gained through introspection. In contrast to such self-invented examples, corpus texts "were written without the possibility in mind of their being linguistically analysed" (Schneider 1988d: 301) and can thus furnish a more objective, empirical basis for verifying whatever factors are claimed to lie behind variation patterns. This inductive method of analysis makes it possible to "use well-established scientific procedures involving observation, analysis, theory building and subsequent verification" (Kennedy 1998: 271). As a result, observations based on a large body of natural texts can help to elaborate and articulate empirically reliable syntactic models, while invented examples may be misused to tailor linguistic reality according to some pre-shaped theoretical opinions.

Modern corpora afford the opportunity of making precise statements not only about which alternative structures a given verb is found in but also about their relative frequencies, and of correlating the use of individual structures with several variables. Such information is important for a full description of the constructions studied in this monograph, but it is rarely found in dictionaries and grammars, which tend to concentrate on the structural alternatives

which are theoretically available, neglecting the relative importance and exact conditions of these options. Corpus studies do not only allow the examination of the syntactic system, i.e. of what constructions are possible in a language, but also of the ways this system is actually put to use in *parole* (Kennedy 1998: 270-1; Schneider 1997: 43), which may facilitate our understanding of why one construction is chosen over a functionally related one in a certain context.[8]

Finally, electronic corpora have made it feasible to study syntactic constructions in extremely data-intensive ways (Kennedy 1998: 5). For an analysis of the factors underlying patterns of syntactic variation, quantification is crucial because there is "strength in numbers" (Kilby 1984: 7) — to obtain a truthful and reliable picture of syntactic and semantic tendencies in the use of specific constructions, the empirical basis should be as large and firm as possible.[9]

Absolute numbers are frequently not very telling in themselves, however, and are certainly not the best way to exploit the potential of quantitative data. To give a better sense of relative numbers, I use percentages and illustrate frequencies in diagrams.[10] Moreover, in order to get a truthful picture of the significance of certain factors I also apply the statistical method of the chi-square-test, which helps to decide if numerical differences are due to chance or indicative of systematic variation.

2.3 A short outline of the statistical methods used

To use the chi-square test, every independent observation that is made must be classified according to two groups of qualitative attributes and then arranged in a contingency table, which provides a crosstabulation of the two factor groups so that each possible combination of the qualitative criteria is represented by one cell in the table (Tesch 1988: 54-5). The numbers in each cell represent the observed frequencies *O* as found experimentally in the corpus, which

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[8] Regional, social, or gender differences in the use of the constructions studied here are excluded from the present investigation for two principled reasons. First of all, I am interested in comparing the treatment of a group of syntactic structures within the discrete and non-discrete paradigms of syntax; the inclusion of heterogeneous regional or social data would make it more difficult to appreciate the overall conceptual picture I intend to draw. Secondly, my overarching concern is to reveal the cognitive foundation of secondary-predicate constructions, which, I suspect, is largely independent of regional or social differences. While such differences are thus immaterial for the present purpose, they may certainly prove relevant for more sociolinguistically oriented studies of secondary-predicate constructions. When I use the language name 'English', this is therefore meant as "a harmless reification of the commonality of the linguistic ... knowledge of a perceived community of speakers" (Jackendoff 2002: 35).

[9] Due to the enormous size of the BNC, the behaviour of high-frequency words such as *believe* and *think* could not be studied in the entire corpus. In such cases, reasonably large random samples were taken to be representative of the whole population.

[10] Percentages are usually rounded because I am more interested in appreciable relative frequencies than in spurious accuracy. Due to rounding, the sum of individual percentages does sometimes not exactly add up to 100.

can then be compared with the frequencies as expected under the null hypothesis of independence between the two classes of attributes examined (Tesch 1988: 55). The statistically expected frequency E in a $cell_{ij}$ is defined as the product of the row total times the column total of the observed frequencies, divided by the grand total of items n (Tesch 1988: 55; Zöfel 1985: 193). To assess the difference between the observed and expected frequencies in a $cell_{ij}$, the index χ^2 is used, which is calculated with the following formula (Tesch 1988: 56; Zöfel 1985: 193):

$$\chi^2_{ij} = \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

The empirical χ^2-value of the whole table is the sum of the χ^2-values of all cells (Tesch 1988: 56). The calculated χ^2-value can now be used to decide whether the two characteristics examined are independent or whether they are somehow associated with each other. For this purpose, the empirical χ^2-value is compared with a critical value as found in statistical tables (such as Oakes 1998: 226).[11] If the empirical χ^2-value is greater than or equal to the critical one, the null hypothesis that the two attributes studied are independent of each other can be rejected at a stated significance level: if the χ^2-value for the table is higher at $p < 0.05$ (i.e. the probability that the null hypothesis can be rejected is greater than 95%), the differences are said to be 'significant', if it is higher at $p < 0.01$, the differences are 'very significant', and if it is higher at $p < 0.001$, the differences are 'highly significant'.

Since the chi-square test detects virtually any departure from independence between two characteristics, a significant result only tells us that two characteristics are not independent of each other, but it does not indicate the strength of association between them. In order to assess the strength of relationship between two attributes, we can use the phi-coefficient[12], which is defined as follows (L being the smaller of the two columns/rows):

$$\varphi = \sqrt{\frac{\chi^2}{n\,(L - 1)}}$$

A score close to 0 shows that there is little or no relationship between the two attributes studied, while a score close to 1 reflects almost complete dependence.[13] The value obtained in this

[11] The value of the critical χ^2-index is dependent on the size of the contingency table, which is indicated by the number of degrees of freedom *df* a table has. The degrees of freedom are calculated with the following formula: $df = (k - 1 * m - 1)$, with k being the number of rows and m the number of columns in a table (Tesch 1988: 57).

[12] The φ-coefficient is more convenient than the frequently used coefficient of contingency, which cannot reach an upper limit of 1 (Zöfel 1985: 191).

[13] χ^2-values only indicate that there is some significant association, and φ-values measure the strength of this association. None of these values can, however, be used to make cause and effect claims (Oakes 1998: 24).

way may not only be used to illustrate the strength of relationship between the two characteristics examined in one table, but can also be used to compare strengths of relationships across several tables.

It is not enough to know that two attributes are significantly related and what the strength of this association is; we also need to factor out the cells which are responsible for significant results. The following rule of thumb can be applied for that purpose: if the χ^2-value of a cell is > 10.8, differences between the observed and expected frequencies in that cell can be said to be highly significant (Zöfel 1985: 187).

2.4 Limits of corpus studies

Electronic corpora and statistical procedures hold out the promise of absolute objectivity and reliability, but empirical methods also have their limitations. Every corpus is restricted in scope and its design is subject to editorial decisions, so that comprehensiveness and representativeness remain ideals that can never be fully attained. Moreover, corpus data are never independent of theoretical considerations. Although the BNC is a fully tagged corpus, I had to code every instance of a relevant construction by hand, assigning to it several semantic and syntactic values specific to my purpose of study, before I could submit the data to frequency counts.[14] Since each observation must be placed in a distinct cell of a contingency table, linguistic classifications intended for frequency counts are necessarily based on absolute distinctions. Yet many linguistic phenomena are not amenable to such either-or treatment because the criteria used do not always constitute disjoint sets; this difficulty can be observed with particular perspicuity when semantic differences are at stake. The arrangement of individual observations in contingency tables is therefore sometimes dependent on subjective, if principled, criteria. Furthermore, corpus results only present a picture of the surface-structure side of language (Schneider 1988d: 301). To explain the reasons for particular frequencies and distributions, it will be necessary to interpret the syntactic and semantic mechanisms underlying statistical significances. The analysis of these factors again requires conceptual rather than purely empirical work (Kilby 1984: 5; Schneider 1988d: 311).

Another major drawback of corpus studies is of a much more basic and practical nature: "corpus analysis is time-consuming and involves tedious search procedures which are not particularly productive or creative labour. However, even with the aid of a computer every researcher has only a limited amount of time and working capacity at his disposal" (Schneider

[14] Given the comparatively large number of tokens examined, the possibility of counting or classification errors cannot be ruled out. I hope that this does not impair the overall picture that emerges, though.

1988d: 301-2). Researchers must thus put restrictions on the amount of corpus data they can integrate into their studies. While it would certainly have been desirable to underpin all of my results with corpus evidence, practical considerations have forced me to envisage a more limited scope for the use of corpus data. Whenever possible, I have used the following question as a yardstick: where is corpus evidence absolutely necessary as a basis for reliable syntactic claims, and where does it primarily provide interesting exemplification without considerably enhancing the understanding of a syntactic problem? On the basis of these common-sense considerations, I have decided to concentrate corpus investigations on only one of the secondary-predicate construction, the so-called QUALIFYING Construction illustrated by (3c) above (see chapter 11), which poses the most vexing and long-standing problems, and in which the principles underlying the functional variation between related structures can only be revealed on the basis of huge amounts of data. The other two secondary-predicate constructions examined in this monograph, the RESULTATIVE and DEPICTIVE Constructions illustrated by (3a) and (3b), respectively (see chapters 9 and 10), present problems of a more conceptual nature, which do not necessarily require the help of a corpus. This does not mean, of course, that follow-up studies will not be able to put this conceptual work on a more solid empirical foundation or that some of my assumptions will have to be modified on the basis of additional data.

Corpus data are but one of the many resources that can be brought to bear in finding a solution to the problems posed by secondary-predicate constructions. It is not the case that only corpus results are empirical while other methods are subjective; rather, the "boundaries ... between corpus-based descriptions and argumentation and other approaches to language description are not rigid" (Kennedy 1998: 8). Since we should be sure we get everything we can in the way of evidence, I have opted for an eclectic methodological approach in this dissertation and will use corpus evidence alongside syntactic tests, semantic analyses, introspection, interviews, and evaluation tests conducted with native speakers of English.

Part I:

Challenging Syntactically Discrete Approaches to English Secondary-Predicate Constructions

3. A critique of syntactic discreteness

Syntactic studies aim to uncover general principles underlying the seemingly unsystematic mass of sentence data a modern language like English confronts us with. It consequently goes without saying that no inquiry into syntactic structures can be written in a theory-neutral vacuum, and even grammars with a mainly descriptive and empirical orientation (such as, for example, Biber *et al.* 1999) are grounded in largely implicit but nevertheless far-reaching theoretical assumptions. In itself, the fact that syntax is the theoretically most complex branch of modern linguistics is thus neither surprising nor alarming. What is alarming, however, is the impression that some of the most advanced contemporary syntactic theories appear to have lost touch with the sentence data they were originally designed to explain, and that many current syntactic discussions tend to be caught up in complexities created by the theoretical framework itself rather than by the linguistic situation. Adding to that impression is the fact that we are experiencing an unprecedented proliferation of syntactic theories that are drifting apart into largely incompatible grammatical models.

There are a few voices in the field that oppose this current trend and demand that the balance between theory and data should be redressed to a great extent (e.g. Croft 2001: viii). In accordance with this view, the present chapter seeks to provide a critical re-examination of some deeply-rooted theoretical axioms that permeate most contemporary syntactic approaches, and to challenge them with methods that are theoretically less encumbered and empirically sounder. My criticism will centre around the notion of 'linguistic discreteness' (Linz 2002: 14-5) endorsed by most formal grammars, a notion which can roughly be subdivided into the categories of syntactic, intersystemic and epistemological discreteness. The last two aspects will be taken up in part II; what concerns us here is the paradigm of syntactic discreteness, which will be confronted with the alternative view of 'linguistic non-discreteness' as developed in recent publications of a more functional bent, particularly Langacker's work on cognitive grammar (1987, 1999a), Golberg's book on Construction grammar (1995) and Croft's monographs on functional and Construction grammar (1991, 2001).

3.1 Distributional mismatches as the stumbling block of discrete syntax

In large measure, syntactic theories are predicated on the assumption that complex linguistic units such as sentences are built up from smaller, discrete parts. Such approaches, which define syntactic constructions in terms of combinations of atomic, primitive elements, will here be referred to as 'syntactically discrete'. A syntactically discrete model works bottom-up because it assumes that discrete syntactic elements taken from some independently existing lin-

guistic inventory are combined to form larger constructions according to certain rules of combination (Croft 2001: 47; Fillmore, Kay and O'Connor 1988: 502). In other words, it is thought that the form and meaning of a complex syntactic entity can be computed from the knowledge of its constituents and of a limited number of syntactic and semantic rules (Fillmore, Kay and O'Connor 1988: 502). A famous proponent of discrete syntax is Jackendoff, who believes that knowledge of a language essentially comprises two components: "One is a finite list of structural elements that are available to be combined ... The other component is a finite set of combinatorial principles, or a *grammar*" (2002: 39).

These basic tenets are shared by descriptive grammars such as Biber *et al.* (1999) or Huddleston and Pullum (2002), as well as formalist theories like modern generative grammar (e.g. Chomsky 1981, 1995) or Lexical-Functional Grammar (LFG; e.g. Bresnan 2001), and the difference between them in this respect is a matter of degree only, not of kind. The distinctive property of formalist grammars is that they embrace what Chomsky has dubbed the "Galilean style" of linguistic description (1980: 218), i.e. they aim to capture the nature of the linguistic system in mathematically precise, closed models (Bresnan 2001: 3). A logical consequence of positing complex formal structures behind the human language faculty is the hypothesis that linguistic knowledge must, to a large extent, be determined genetically (Chomsky 2000: 4; Grewendorf 2002: 11; Jackendoff 2002: 334). Descriptive grammars are on the whole less fastidious about the formal rigidity of their syntactic representations and do not theorise much about the cognitive basis of their models, yet their general approach is likewise based on the premise that syntax must be described in a discrete, bottom-up way. Since the sophisticated and sometimes involved concepts of generative theories will be more closely examined in chapter 5, I shall confine my discussion here to the more familiar notions used in descriptive grammars.

As a rule, descriptive grammars take the verb to act as the core of the sentence in the sense that it determines the basic architecture of a syntactic construction. The verb is considered to be a relational entity containing variables that are satisfied by arguments in the clause.[15] When verbs are held to govern the rest of the sentence, they need to be classified according to the specific syntactic frames they occur in. This sort of subcategorisation frequently goes by the name of 'valency', which indicates the capacity a certain verb has for combining with other sentence elements (Allerton 1982: 2). There are two facets to the valency of a verb: the 'quantitative' valency specifies the number of arguments or participants

[15] The idea that the verb is a function that maps arguments into some sort of eventuality has been introduced into modern linguistics by Tesnière (1965).

that are minimally involved in the activity, process or state expressed by the verbal predicate. On this basis it is possible to distinguish between one-place (monovalent, intransitive), two-place (bivalent, transitive), and three-place (trivalent, ditransitive) verbs (Allerton 1982: 94; Emons 1978: 4; Huddleston and Pullum 2002: 218-9). In traditional terminology, a construction containing a monovalent verb is called an 'intransitive' clause and sentences with bivalent and trivalent verbs are labelled 'transitive' and 'ditransitive', respectively (Huddleston and Pullum 2002: 216-7).[16] The 'qualitative' valency defines the semantic relationships in which the arguments stand with the verb because verbs are considered to assign thematic roles such as AGENT[17] or PATIENT to their arguments (Fillmore 1968; Huddleston and Pullum 2002: 228). Although there is no general consensus on this, most syntacticians would agree that the qualitative valency of a verb also determines the morphosyntactic realisation of the thematic roles (Emons 1978: 5-6). By way of illustration, a simple sentence such as *Mary killed John* is composed of a bivalent verb (*killed*) taking two complements, the NP subject *Mary* carrying the thematic role AGENT and the NP direct object *John* with the thematic role PATIENT. The rationale behind the valency approach is that the whole — some syntactic construction such as a sentence — is hierarchically composed of its parts, with the verb acting as a kind of 'control centre'. Both the structure and the meaning of a sentence are considered to be compositional because they can be derived from the form/meaning of its constituents and the syntactic/semantic relations obtaining between them (Saeed 1997: 11).

Familiar and pervasive though this building-block view of syntax and semantics may be, it is vulnerable and, in the final analysis, untenable. It crucially depends on the recognition of a limited and clearly definable number of syntactic primitives such as distinct subclasses of verbs, semantic relations such as AGENT or PATIENT, and syntactic relations such as subject and direct object. The fundamental empirical procedure to justify these distinctions is the distributional method, which systematically examines the grammatical (and semantic) behaviour of a particular linguistic element across various syntactic constructions (Croft 1991: 6; 2001: 11). Elements showing the same distribution in the sense that they can fill the same role in different syntactic environments may then be classified as belonging to the same category. A particular verb is identified as bivalent, for example, if it fulfils the set of criteria established for bivalent verbs in English, i.e. if it shows some characteristically bivalent behaviour in the constructions used as syntactic tests.

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[16] In addition to complements, a sentence may also contain adjuncts, i.e. optional elements governed by the verb but not required by its argument structure; adjuncts provide additional information with respect to, for example, time or place (Huddleston and Pullum 2002: 219).

[17] In this book, capitals are used to label thematic roles.

The distributional method is a crucial and indispensable empirical tool; however, its practical application in contemporary syntactic theories reveals problems that seriously undermine the discrete conception of syntax. Since the close evaluation of the syntactic tests put forward for the elements of secondary-predicate constructions will be a focal concern of the following chapters, I will restrict my criticism to a few sketchy remarks, using the category 'direct object' as illustration. At first blush, this grammatical function seems to be clearly defined in English by a number of intuitively plausible distributional criteria. To mention just five familiar diagnostic tests: direct objects are right-adjacent to the verb that selects them (9a), are realised by an NP (9b), show accusative case marking (9c), have the potential to be converted into the subject of a corresponding passive construction (9d), and are realised by a reflexive pronoun if they are co-referential with the subject, but by a non-reflexive element if they are referentially distinct (9e) (e.g. Allerton 1982: 42-4; Biber *et al.* 1999: 126; Huddleston and Pullum 2002: 245-7, 1487).

(9) a. John saw **Mary** in the pub.
b. John saw **his old love** in the pub.
c. John saw **her** in the pub.
d. **Mary** was seen in the pub by John.
e. John$_i$ loves **himself**$_i$./ John$_i$ loves **Mary**$_j$.[18]

Yet the idea of clear-cut syntactic distinctions that the discrete model of syntax relies on stands in sharp contrast to the variability we actually observe in language. For each of the tests described above, there are counter-examples which show that the direct object criteria are variable in their consistency: what seems to be a direct object does not immediately follow the verb in (10a); the position after the verb is occupied by a clause instead of an NP in (10b); unless the direct object is realised by a pronoun, it does not show distinctive case marking (10c); the transposition to the subject of a related passive clause is not possible in (10d); finally, the direct object must be co-referential with the subject and cannot be referentially distinct in (10e).

(10) a. John saw in the pub **his old love Mary, who he hadn't spoken to for years**.
b. John saw **that his old love Mary was in the pub**.
c. John saw **Mary** in the pub.
d. ***180 pounds** were weighed by Mary now.
e. John$_i$ prided **himself**$_i$ on his attractiveness./ *John$_i$ prided **Mary**$_j$ on her attractiveness.

To call the expressions printed in boldface 'direct objects' would prejudge the case and mean, as Kilby puts it, "to fit a number of incompatible phenomena into a pigeonhole which happens to be there" (1984: 41), in this case the category 'direct object'. Yet the examples above amply

[18] Co-referential NPs are typically marked by identical coindexes.

demonstrate that there are mismatches in distributional patterns which make it difficult to identify a clearly circumscribed notion 'direct object'. If we want to retain such a linguistic entity, we are forced to use only a specified subset or just a single one of the diagnostic tests and disregard the conflicting evidence. This is common practice in grammars of English, but it represents what Croft calls "methodological opportunism" (2001: 84) because it chooses to overlook data that does not fit neatly into the preestablished boxes: "Methodological opportunism selects distributional tests at the whim of the analyst, and ignores the evidence from other distributional tests that do not match the analyst's expectations, or else treats them as superficial or peripheral" (Croft 2001: 45).

Croft's criticism of opportunistic methods in syntax is wholly justified. The consequence of this analytical policy is not only that a considerable number of exceptional and equivocal cases is simply ignored, but also that each syntactic theory takes different tests to be relevant and consequently draws different distinctions between syntactic categories, to the extent that "the wide-ranging nature of the determinative criteria ... allows for no common point of reference and comparison" any more (Morley 1991: 296). The definition of syntactic building-blocks and grammatical relations such as 'transitive verb', 'subject' or 'direct object' is thus largely conditioned by the theory to which we subscribe, a fact that should cast severe doubt on the tenability of this syntactic procedure: "[M]ethodological opportunism ... is unprincipled and ad hoc and hence is not a rigorous scientific method for discovering the properties of the grammar of a language" (Croft 2001: 41).

The upshot of our discussion is that it is not possible to define a cross-constructional category of 'direct object' in English, nor, for that matter, of any other of the syntactic building-blocks whose existence is commonly taken for granted:

> Every linguist relies on these concepts, but few if any are prepared to define them in an adequate, explicit, and revealing way ... The linguistic community has not yet achieved generable, workable, deeply revelatory characterizations of these constructs in terms of more fundamental notions in the context of a coherent overall conceptual framework. (Langacker 1987: 2)

Several instances of a presumed linguistic category across different constructions exhibit similar, but not identical behaviour because every construction (such as the passive or reflexive constructions illustrated in (10d) and (10e)) is characterised by its own peculiarities. As Kilby rightly observes, it is therefore preferable to discard such sketchily defined concepts as 'direct object' because "it is not at all clear that the same notion of 'direct object' needs to be specified independently of the particular construction that we are investigating" (Kilby 1984: 41).

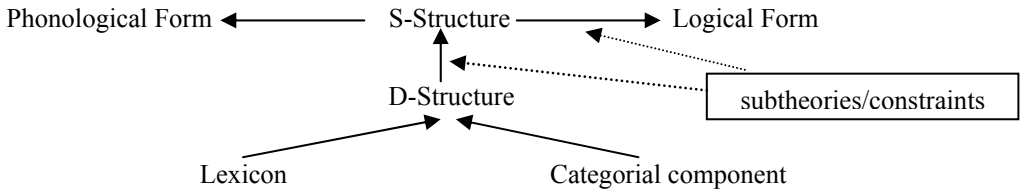
3.2 Constraints and representational levels — a way out for discrete syntax?

While descriptive grammars are usually satisfied to list diagnostic tests for a particular linguistic entity without being bothered too much by conflicting evidence, formal theories such as the generative school of linguistics must find ways to cope with distributional mismatches in order to maintain the coherence and mathematical consistency of their syntactic analyses. Both the extent to which exceptional cases are tolerated and the ways in which they are handled have changed considerably in the history of generative grammar.

Early generative theories such as the Standard Theory and the Extended Standard Theory (Chomsky 1957, 1965, 1975) sought to construct descriptively adequate syntactic derivations. As a result, the empirical complexity of a language such as English was fully accepted and even unusual constructions were captured by specific, narrowly defined derivational rules (Grewendorf 2002: 98; Henry 2002: 8). In the course of this early phase, the goal of descriptive adequacy necessarily led to a steady increase in the number of syntactic rules. The ever greater complexity and variety of rule systems, however, soon came into conflict with the second basic principle of generative grammar, that of explanatory adequacy. Chomsky and his followers have always aspired to uncover general linguistic universals restricting the number of possible grammars so that the cognitive basis of the human language faculty could be accounted for (Linz 2002: 52).

The tensions between the conflicting demands of descriptive and explanatory adequacy have been alleviated from the so-called Government-and-Binding (GB) version of generative grammar onwards (Chomsky 1981) — much to the detriment of descriptive adequacy. The properties of language are now held to be invariant at some deeper level: "The natural way is to challenge the traditional assumption ... that a language is a complex system of rules, each specific to particular languages and particular grammatical constructions" (Chomsky 2000: 7). Since the early 1980s, we can discern a general trend in generative scholarship to focus on abstract, universal principles of grammar that interact with a finite number of options or parameters to yield specific syntactic constructions (Chomsky 1995: 6; Grewendorf 2002: 98; Henry 2002: 275). The overriding concern of GB-theory is the formulation of those underlying principles, which are assumed to be organised in the form of separate modules or subtheories that exert a constraining effect on one another (Grewendorf 2002: 13). The following diagram sketches the GB-model of generative grammar and indicates the place the subtheories occupy within the overall framework:

Figure 1: The Government-and-Binding model of generative grammar



(adapted from Aarts 1992: 14 and Grewendorf 2002: 107)

The base comprises the lexical component, which contains entries specifying the form and meaning of words, and the categorial component, which determines the structural properties of the sentence according to the rules of X'-theory (for details see chapter 5.3). The insertion of lexical items into the structures generated by the categorial component results in an underlying, abstract representation called D-structure, which conveys all the information pertaining to the thematic relations in the sentence (Grewendorf 2002: 106). This is the place where most of the subtheories come into play: according to the constraints imposed by these theories, the base structure is transformed into a corresponding surface representation (S-structure), which serves as input for the phonological component (Aarts 1992: 13-4). If interpretative demands of the subtheories make it necessary, the S-structure of the sentence is turned into a distinctive Logical Form (LF) representation that does not have phonological reflexes (Haegeman and Guéron 1999: 538-9).

This multi-stratal, modular architecture has fundamental implications for the treatment of specific syntactic constructions. The representational levels that are orthogonal to the theories (D-Structure, S-Structure, LF) represent the structure of the sentence in different forms, depending on the specific constraints imposed by subtheories at the respective point in the derivation. When the subtheories are held to be the regular, coherent substrate of the human language faculty, empirically observed constructions and distributional mismatches can be conveniently explained away as superficial phenomena resulting from the interaction of conflicting syntactic modules (Croft 1991: 29). The exact workings of this theoretical device with respect to secondary-predicate constructions will be laid out in chapter 5.3; at this point, a brief and rather straightforward illustration must suffice. To take up one of the distributional mismatches concerning the category 'direct object' encountered above: the putative direct object does not occupy the immediately postverbal position in the S-structure of the sentence *John saw in the pub* ***his old love Mary***. Within the GB-model, this can be claimed to constitute only a superficial feature; at D-structure, the phrase *his old love Mary* is taken to be right-adjacent to the verb *saw* and thus to occupy the canonical direct object position (Haegeman and Guéron 1999: 222). In the transition from D-structure to S-structure, however, some con-

straint having to do with phonological 'weight' or information structure forces the direct object to the right of the adverbial phrase *in the pub* (Haegeman and Guéron 1999: 222). Since a movement is thought to leave behind a co-indexed trace in the base position (Haegeman and Guéron 1999: 222), the 'landing-site' of the direct object remains related to its original position (*John saw* $\boldsymbol{t}_i$ *in the pub* ***his old love Mary***$_i$). If diagnostic tests for discrete syntactic units such as 'direct object' are assumed to be met if they apply at some representational level or other, this sentence must no longer be considered a counter-example to the positional criterion.

This line of reasoning can accommodate the atomistic and discrete paradigm of grammar, but it runs into serious conceptual difficulties. The complexities of empirically observed constructions can only be accounted for if a large number of constraints and levels of representation are added to the system, "until one reaches the situation of having a component for every rule or construction in the grammar" (Croft 1991: 28). Such a proliferation of theoretical components ultimately threatens the aim of explanatory adequacy which the GB-theory of grammar was originally intended to provide (Linz 2002: 214).

For this reason, Chomsky has tried hard to work against the isolating aspects of the GB-model, which the increasing tendency towards modularisation has created, by strengthening the integrative properties of the system (Sternefeld 1991: 3). These efforts finally resulted in the Minimalist Program (MP), which substituted some of the modular structure of grammar endorsed by GB-theory with an integrated derivational system (Chomsky 1995: 170). An in-depth exposition of the computational machinery of the MP is beyond the scope of this paper[19], so I will only concentrate on the conceptual basis of this theory insofar as it is relevant to the present discussion. Chomsky demanded that the "'excess baggage' [of the GB-theories; H.S.] is shed" (2000: 11) in order to pave the way for a much leaner version of universal grammar. As Jackendoff puts it, "[t]he goal is to posit the smallest toolkit that can still account for the data" (2002: 76). Derivations are now measured against general scientific criteria such as economy, simplicity, or elegance; syntactic analyses that do not conform to these yardsticks are barred from the system (Chomsky 1995: 8-9; Grewendorf 2002: 100-1). Chomsky argues that the "substantial idealisation" (1995: 7) imposed by such abstract criteria is not forced upon language, but exactly mirrors the nature of this human faculty:

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[19] Most publications of generative grammarians on secondary-predicate constructions are couched in the terminology of GB-theory and not in that of the MP, so I will predominantly refer to the former framework in later chapters. Since "the Minimalist Programme is a progression rather than a complete U-turn" (Cook and Newson 1996: 312), many of the arguments and analyses presented in a GB-framework still hold essentially true in the MP. More central deviations from GB-theoy will be indicated in the following discussions whenever necessary.

> [W]e can ask how good the design is. How close does language come to what some super-engineer would construct ... there are even indications that the language faculty may be close to "perfect" in this sense; if true, this is a surprising conclusion. (2000: 9)

My sense is that this conclusion is too surprising to be true, and it definitely runs counter to the distributional mismatches manifested by almost every linguistic phenomenon. Since Chomsky has chosen to reject the inelegant complexities of the GB-model, the only way to uphold the notion of language as "something like a 'perfect' system" (1995: 1) is to focus on very general, abstract rules and constraints and to ignore the empirical variability of language. This seems to be the direction that Chomsky's grammar has headed into when we consider his claim that, in contrast to abstract principles, "constructions are ... taxonomic artifacts, useful for informal description perhaps but with no theoretical standing" (2000: 8). A telling sign of Chomsky's policy of idealisation is the terminological distinction between 'I(nternalized)-language', the static system of universal grammar, and 'E(xternalized)-language', i.e. actually observed language data (Chomsky 1995: 15, 2000: 123; Cook and Newson 1996: 21). Chomsky has always characterised the latter as "epiphenomenal" (1980: 83) and not worth the linguist's attention. Generative grammar may have managed to defend its discrete, atomistic paradigm, but only at the cost of narrowing the scope of syntax to just a few core linguistic phenomena. Anything that cannot be captured by abstract, construction-independent principles is relegated to some grammatical periphery that is usually identified with the lexicon, which Chomsky characterises as "a list of 'exceptions', whatever does not follow from general principles" (1995: 235). The lexicon has thus become "the last receptacle of all idiosyncratic information" (Goldberg 1995: 22) within an artificially perfect grammatical system.

In my view, the conceptual foundations of the MP are gratuitous and rather dubious; it is therefore high time to accept the empirical fact that "[m]aximally general categories and rules are highly likely not to be psychologically real; hence the search for maximally general analyses is probably a search for an empirically nonexistent — that is, a fictional — entity" (Croft 2001: 5). How far removed contemporary generative grammar is from the linguistic reality becomes clear in the grand programmatic words of the German generative grammarian Sternefeld:

> Wie in der Physik bemißt sich das Ziel der Universalgrammatik nämlich an ihrem Erfolg, sich sozusagen einer "Weltformel" anzunähern, welche die vielfältigen Existenzformen des Kosmos (und der Sprache) wie aus dem Urknall heraus abzuleiten vermag. (1991: 2)

For anyone interested in explanations of actual linguistic phenomena, such a quest for meta-principles is certainly not the right way to go. The following chapter will therefore look at an alternative, non-discrete view of syntax.

3.3 The non-discreteness paradigm of Construction grammar

When we are not prepared to downplay the significance of conflicting distributional data or to relegate their explanation to some more abstract representational level, we are compelled to reject discrete linguistic notions such as 'bivalent verb' or 'direct object' — the same verb or NP just never behaves alike in two different syntactic environments (Croft 1991: 16). The fact that "distributional analysis reveals a myriad of classes" (Croft 2001: 83) and not simply a few sharply delineated grammatical primitives may be a source of irritation to discrete syntactic conceptions, but it is an undeniable characteristic of linguistic reality. The properties of a particular NP are not defined by its belonging to a uniform linguistic class of 'subjects' or 'objects', but only by the specific construction it occurs in (Croft 2001: 48).

We can make a virtue of necessity if we change our familiar outlook and accept constructions, rather than the constituents they contain, as the proper units of syntactic representation (cf. Croft 2001: 47; Fillmore, Kay and O'Connor 1988: 501; Goldberg 1995: 1-2). In such a grammatical framework, constructions must be assigned not a derivative, but a primitive status. Construction grammar thus "begins with the largest units and defines the smaller ones in terms of their relation to the larger units" (Croft 2001: 47) — in clear contradiction to the building-block model of mainstream discrete grammars. A top-down approach is not surprising when we consider our linguistic and cognitive reality:

> What occurs in natural discourse are constructions, that is, complex syntactic units; we do not hear individual words with category labels attached to them ... In other words, from the points of view of the language analyst, language user, and language learner, the larger units come first. (Croft 2001: 52)

Although this view may sound unfamiliar in syntax, it has a notable scientific predecessor in the paradigm of 'Gestalt psychology'. The following quotation from one of the most outspoken proponents of this school of thought could serve as a motto for modern Construction grammar:

> The whole is more than the sum of its parts. It is more correct to say that the whole is something else than the sum of its parts, because summing is a meaningless procedure, whereas the whole-part relationship is meaningful. (Koffka 1935: 176)

Such a change of perspective from smaller to larger units does not suggest, of course, that syntactic constructions must be seen as unanalysable wholes; without a doubt, they consist of smaller parts such as words and phrases. Yet Construction grammar assumes a difference between what Langacker calls "compositionality" and "analysability" (1987: 448): compositionality expresses the standard view that "the value of the whole is predictable from the values of its parts" (Langacker 1987: 448); analysability only pertains to the possibility of describing the contribution of individual constituents to the form and meaning of the whole structure, but

rejects the idea of full constructional compositionality: "A composite structure derives systemic motivation from its components, but is not assembled out of them" (Langacker 1987: 463).

Discarding the bottom-up approach for semantic analyses implies that the meaning of a larger construction cannot be calculated from the associated meanings of its constituents. Complex constructions have a *gestalt* structure because they are customarily invested with components of meaning that cannot be inferred from its parts or general rules of semantic combination (Fillmore, Kay and O'Connor 1988: 501; Lee 2001: 84). The only items larger than words that componential grammars usually accept are idioms such as *let the cat out of the bag* or *spill the beans about someone* because they cannot be interpreted by general semantic rules (Jackendoff 2002: 168). Although there are probably as many idioms in the English language as there are adjectives (Jackendoff 2002: 167), idioms have largely been ignored by componential grammars because they threaten the neat division of work between the lexicon and the syntactic component (Jackendoff 2002: 178). While mainstream grammars treat idioms as exceptional phenomena, Fillmore, Kay and O'Connor (1988) have been able to show that the large bulk of idioms is much more similar to 'ordinary' syntactic constructions than is usually realised. The only difference between the sentences *John let the cat out of the bag* (in its idiomatic sense) and *John chased the cat* is that the former is, with the exception of the subject *John*, fully lexically specified, while the latter allows a greater degree of lexical variation (cf. *Mary chased the cat*; *John chased the dog*; *John ran after the cat*). Idioms differ from regular constructions only in their lesser degree of syntactic and semantic variability. Construction grammars assume that the components of any syntactic structure, whether it is a conventional idiom or not, motivate only aspects of the constructional meaning but fail to exhaust its full content. The following five sentences, which are arranged in the order of the variability of their lexical make-up (variable elements are bracketed and printed in boldface) can serve as illustrations:

(11) a. That's the way the cookie crumbles.
b. [**John**] let the cat out of the bag.
c. [**John**] pulled [**Mary**]'s leg.
d. [**John**] [**drank**] [**the whole afternoon**] away.
e. [**John**] [**chased**] [**the cat**].

Our approach necessitates one final iconoclastic move. If constructions are generally associated with their own idiosyncratic meanings, it no longer makes sense to draw a sharp line between lexical items and constructions. Instead, we must assume a continuum between the lexicon and syntax because both words and larger constructions are pairings of form with meaning (Croft 2001: 16-7; Goldberg 1995: 7; Goldberg, Casenhiser and Sethuraman, to ap-

pear; Langacker 1987: 58; Wierzbicka 1988: 8). The only difference between words and syntactic structures is that the former are "substantive and atomic", while the latter "can be at least partially schematic and complex" (Croft 2001: 16). Even componential grammarians such as Jackendoff accept that, in light of current research, the distinction between lexical items and syntactic rules has begun to blur and that there is probably "no epistemological divide between the form of stored items and the form of rules" (2002: 189), but rather "a cline of stored linguistic forms, from ordinary words, through idioms ..., through constructions ..., all the way to phrase structure rules" (2002: 218; see also Goldberg and Jackendoff, to appear). Constructions exhibit behaviour that is typical of all linguistic signs, irrespective of their size and internal complexity; like words, for example, constructions do not have a single, fixed meaning, but are characteristically polysemous (Goldberg 1995: 31-2).

The relation between words and constructions is bi-directional: a word can appear in a whole range of different constructions, while the roles in a construction can be filled by a large number of different words (Croft 2001: 46). This is the place where generalisations and even language universals come into play in Construction grammar: there are strong intralinguistic and sometimes even cross-linguistic associations between a construction having a particular function and a semantically related group of words filling a specific role in that construction (Goldberg 1995: 49, 60; Goldberg, Casenhiser and Sethuraman, to appear). We are, however, not dealing with absolute correlations as are assumed by discrete grammars to exist, for instance, between the directly postverbal position and the direct object, but with tendencies and prototypes (Croft 1991: 17). Corpus investigations therefore fit squarely into the approach of non-discrete syntax: the results obtained from a large variety of authentic texts are usually not as clear-cut as invented examples and thus do not always support the basic distinctions postulated by discrete grammars. For a construction grammarian working with gradience and prototypicality, though, heterogeneous data do not preclude the possibility of arriving at valuable linguistic generalisations. The models based on such empirical results may be "less elegant", but they are "certainly more realistic" (Schneider 1988d: 301) and consequently more conducive to gaining insights into a cognitive system that is founded on associative networks and not on clearly defined mathematical algorithms.

It is incumbent on the grammarian to categorise the constructions that serve as meaningful units for the user of an individual language such as English and to describe the lexical items that prototypically occupy the constructional slots (Croft 2001: 53-4). This dissertation regards the three formally similar, but semantically different sentences mentioned in the introduction as three separate constructions because they represent distinct pairings of form and

meaning. Since constructions are assigned the status of syntactic primitives (instead of such elements as 'small clause' or 'complex predicate'), they are identified by constructional (proper) names: RESULTATIVE Construction (cf. Halliday 1967: 63) for sentences of type (12a), DEPICTIVE Construction (cf. Halliday 1967: 63) for (12b) and QUALIFYING Construction (cf. Schneider 1997: 39) for (12c):

(12) a. The farmer shot the dog *dead*.
b. John ate the soup *hot*.
c. Mary considers John *handsome*.

A detailed account of these constructions can only be given in part II of this book, when the other two basic tenets of discrete grammars, intersystemic and epistemological discreteness, have been challenged. At this point, we are interested in additional arguments supporting the basic principles of Construction grammar.

3.4 The non-discrete perspective of the neurosciences

Almost 40 years ago, Chomsky's claim that syntacticians need not bother about the mental reality of their theories (1965: 193, footnote 1) was not in dispute. As Jackendoff rightly remarks, however, "with our greater understanding of brain function at the neural level, dependency has to be regarded as going both ways" (2002: 27), i.e. the validity of syntactic theories should also be measured against what we know about the neural instantiation of knowledge structures such as language (an attitude that Lakoff characterises as "Cognitive Commitment" (1989: 124-5); cf. also Langacker 1999b: 15). Since the neurosciences are only beginning to develop cognitive models of their own, linguists could help to refine these models on the basis of linguistic data. At present, though, many cognitive phenomena are still only dimly comprehended: "The paradox that we know more about faraway galaxies than we do about the core of our own planet has a cognitive analogue: We seem to know a good deal more about the world around us than we do about our minds and brains" (Fauconnier 1997: 2). The following remarks should therefore be taken as suggestive only, but I think they can provide first, if rather coarse, guidelines for understanding brain processes with respect to language.

The neurosciences are centrally concerned with what has come to be known as the 'binding problem', i.e. the perplexing question of how our brains can synthesise the flood of fragmentary sensory and intellectual data they are constantly confronted with into coherent, meaningful units of experience (Linz 2002: 158). The classic view assumed a hierarchically organised system of information-processing in which isolated bits of information gradually converge into more complex representations. According to that step-by-step, bottom-up approach, discrete assemblies of neurons that are located towards the bottom end of this processing se-

quence code quite specific, uni-modal fragments of information, while those neurons located towards the top end contain integrated, multi-modal representations of reality (Linz 2002: 159-60). This way of thought, which was inspired by the computational analogy (Jackendoff 2002: 21-2), exactly parallels the linguistic hypothesis that complex syntactic units are sequentially constructed from discrete elements according to some rules of combination.

The neurosciences have, however, undergone a paradigm change that has left these traditional notions of information processing and information storage far behind. An alternative theory that has gained considerable popularity is that formulated by the cognitive scientist Antonio Damasio. Damasio and others have found out that there are no discrete neuroanatomical sites onto which sensory and intellectual data could be projected in order to be integrated into coherent wholes (Damasio 1989: 35-6). Instead of a unidirectional processing cascade leading to some higher-order system of integration, the perception of external reality results in the firing of neurons in multiple, disintegrated anatomical sites, a form of mental organisation that must be described as "divergent, one-to-many, parallel, and sequential" (Damasio 1989: 36). The key to the binding problem seems to be what Damasio calls a "trick of timing" (1989: 38). Neural activity in multiple brain areas is synchronised by the simultaneous firing of neurons (Damasio 1989: 39):

> If activity occurs within anatomically separate brain regions, but if it does so within approximately the same window of time, it is still possible to link the parts behind the scenes, as it were, and create the impression that it all happens in the same place. (Damasio 1994: 95)

Neurons encoding properties of one object fire in synchrony but out of phase with neurons representing properties of another object. It seems to be this mechanism of temporal correlation on a fast time scale that allows our brains to construct the impression of coherent, meaningful slices of reality. In a similar vein, Damasio speculates that what is stored in so-called 'convergence zones' is not a representation of some experience, but simply a record of the combinatorial arrangements of the neurons that were active during the original experience (1989: 26). This view demands a re-evaluation of the concept of information storage prevalent in the information-processing approach: "A display of the meaning of an entity does not exist in permanent fashion. It is recreated for each new instantiation" (Damasio 1989: 28). The information stored in convergence zones is thus dispositional, potential knowledge, some sort of "dormant firing potentiality" (Damasio 1994: 103) that can only be accessed if the neurons active during the original experience are re-activated in order to reconstruct a copy of that experience. The more often a certain disintegrated group of neurons is led to fire in synchronicity in reaction to some experience, the more stable the convergence zones recording this experience get and the more faithfully this experience can be reinstantiated (Linz 2002: 180).

The fundamental insight of Damasio's theory is that it is not individual, discrete neurons arranged along some hierarchical processing dimension, but coherently active cell groups that must be seen as the basic units of our information-processing system. As a consequence, the function of a single neuron can only be interpreted within a current context of neural activity. Neurons do thus not occupy a fixed place in some static processing line, but can participate in different cell assemblies at different points of time by synchronising their firing activity with some currently activated correlation pattern (Linz 2002: 161-2).

This theory has significant implications for linguistics because Damasio claims that the "representations related to language ... are perceived, acquired, and co-activated according to the principles articulated for non-verbal entities" (1989: 55). Words and sentences are perceived by our brains as acoustic or visual images and processed in a similar way to more concrete external entities (Damasio 1989: 44, 1994: 97; see also Langacker 1987: 78-9). Applied to syntax, Damasio's model casts doubt on discrete approaches and favours constructional theories. The latter do not suppose a unidirectional sequence from words and phrases to sentences; rather, they are in accordance with a disintegrated model of knowledge because they only posit associations between words referring, for example, to particular extralinguistic objects and constructions expressing some extralinguistic event.[20] These associations could be created by a mechanism of temporal synchronisation if the same group of objects regularly appears within the same kind of event. The more frequently these associations are made, the stronger the synaptic links between particular objects coded by certain words and particular events coded by certain syntactic constructions can get, which explains why certain lexical items are more prototypically found in some constructions than in others. Language is thus "ecological", meaning that it is "a system with an overall structure, where effects cannot be localised — that is, where something in one part of the system affects things elsewhere in the system" (Lakoff 1987: 113). If syntax works in as non-discrete or ecological a fashion as other mental processes, the principles of the discreteness paradigm cannot be upheld. At the present stage of research, however, we do not know enough about how syntactic processes are embodied in neurons to decide the discrete/non-discrete debate from a neurological perspective alone.

The question of which syntactic paradigm produces more fruitful results (cf. Croft 1991: 6) is frequently posed from the vantage point of lofty theoretical discourses and therefore does not contribute much to advancing the cause of one paradigm over that of another. Linguistic

[20] Both objects and events are recorded in convergence zones, but of different hierarchical ranks and complexities (Damasio 1989: 48).

frameworks can only prove their utility when they are put to the test of having to explain the gritty details of language; in our case, these are the difficulties created by secondary-predicate constructions.

The following chapters provide an extensive critique of the various ways in which discrete grammars have tried to come to terms with this linguistic pattern in the course of the last thirty years. The discussion will show that none of the various discrete approaches has come up with a solution that is even close to satisfactory; on the contrary, it will become evident that, in its attempts to wrestle with the tricky aspects of linguistic phenomena such as secondary-predicate constructions, a complex syntactic theory like contemporary generative grammar "has also begun to generate anomalies that suggest that the methodology is creating serious conceptual problems" (Croft 1991: 18). This criticism will be followed by an analysis of secondary-predicate constructions from the perspective of non-discrete syntax in part II.

At the same time, we cannot simply skip to part II and reject the results of discrete grammars out of hand. As Bierwisch rightly remarks in a reply to Jäger's (1993) criticism of generative grammar, the summary dismissal of formal theories could lead "zur Ignorierung und Abwertung formaler Instrumentarien, und damit zur Inkompetenz im Umgang mit ihnen" (1993: 110). Formal grammars have their strengths, and I certainly do not want to diminish or undervalue the host of illuminating insights offered by them; I therefore concur with Jackendoff that, at the present stage of syntactic research, "[w]e need all the help we can get from every possible quarter" (2002: 429).

4. Challenging complex-transitive analyses of secondary-predicate constructions

Descriptive grammars undertake to draw a comprehensive picture of the syntactic system of a language like English, and thus have no choice but to integrate tricky structures such as the [NP_1 V NP_2 XP]-pattern into their overall framework as well. Not surprisingly, the treatment of this complementation pattern has been "the subject of some unease among descriptive analysts of present-day English" (Burton-Roberts 1991: 160). Descriptive grammars have generally adopted the strategy of describing and explaining this pattern against the background of other sentence structures that are more familiar and seem to be better understood. In 4.1, I will present and criticise the abortive attempts of contemporary grammars to come to terms with the thorny issues raised by secondary-predicate constructions on the matrix of more familiar structures. Since the NP_2 XP-pattern is closely related, both syntactically and semantically, to the structures underlying sentences such as *I consider him to be a fool* and *I regard him as a genius*, the subsequent chapters, 4.2 and 4.3, will also outline the approach of descriptive grammars to the NP_2 *to be* XP and NP_2 *as* XP-patterns, respectively. The structural analysis of this group of related patterns is the major contribution of descriptive grammars to the research on secondary-predicate constructions, as opposed to a semantic study of the diverse meaning relationships they can convey. In point of fact, there is not much that descriptive grammars have to say on that score, as we will see.

4.1 Treatment of the [NP_1 V NP_2 XP]-pattern in descriptive grammars

4.1.1 The models: transitive and copula clauses

The major clause types assumed by descriptive grammars fall into a relatively small number of categories. In the most common terminology, these are: NP V or 'intransitive' clause (13a), NP_1 V NP_2 or 'transitive' clause (13b), NP_2 V NP_2 NP_3 or 'ditransitive' clause (13c), and NP V XP or 'copula' clause (13d) (e.g. Quirk *et al.* 1985: 53-4):

(13) a. [John] is running.
b. [John] built [a house].
c. [John] gave [Mary] [a cake].
d. [John] is [a teacher].

(13b) and (13d) contain bivalent verbs, while (13a) includes a monovalent and (13c) a trivalent predicate. For the purpose of this chapter, we can disregard intransitive clauses because only transitive, copula and ditransitive patterns have served as analytical models for secondary-predicate constructions. The ditransitive construction is only relevant quantitatively be-

cause verbs such as *consider* are thought to require two postverbal complements like, for instance, the prototypical ditransitive verb *give*. In qualitative respects, however, it is the transitive and copula patterns that have provided a template for secondary-predicate constructions in descriptive grammars.

Both transitive and copula verbs are analysed as bivalent predicates selecting a subject NP and a postverbal phrase as obligatory complements. The two patterns (13b) and (13d) are assumed to differ primarily in the nature of this postverbal constituent. Both kinds of phrases follow immediately after the verb, but while the postverbal phrase in a transitive clause is invariably realised by an NP, that of a copula pattern can be an AP or PP besides an NP (14a, a') (e.g. Huddleston and Pullum 2002: 53). In addition, only the NP_2 of a transitive clause, and not the XP of a copula structure, can be made the subject of a passive sentence (14b, b') (e.g. Downing and Locke 2002: 50), and there is typically number agreement between the subject and the postverbal phrase in a copula structure, but not in a transitive clause (14c, c') (e.g. Downing and Locke 2002: 50-1):

(14) a. John built **a house**.
a'. John is **a teacher**/ **friendly**/ **in good spirits**.
b. **A house** was built by John.
b'. ***A teacher** is been by John.
c. John and Mary built **a house**/ **houses**.
c'. John and Mary are ***a teacher**/ **teachers**.

Semantically, the XP in a copula pattern does not refer to an additional participant like the NP_2 in a transitive sentence, but rather denotes some kind of property of the subject (Burton-Roberts 1986: 79; Huddleston and Pullum 2002: 217-8; Seppänen and Herriman 1997: 136). This semantic characteristic has led some grammarians to dissent from the majority view that the copula verb selects two complements, and to argue instead that the XP must be seen as the main, if non-verbal, predicate, with the copula verb only having auxiliary status (e.g. Hengeveld 1992: 26). While this is not, unlike in generative grammars, the standard analysis of copula structures, descriptive grammarians frequently toy with this view as well (e.g. Huddleston and Pullum 2002: 52; Koziol and Hüttenbrenner 1956: 26), so we must briefly look at the pros and cons of this alternative account.

One major argument that is advanced for the auxiliary hypothesis is typological: since there are languages such as Turkish or Russian that can express the semantics of English copula sentences without using an overt verb, it is argued that the copula cannot be the syntactic core of the sentence (Hengeveld 1992: 27-8). (15) is an example from Russian[21] with an interlinear translation:

[21] I am grateful to Ekaterina Nikolaevna Batiouk for the Russian examples.

(15) Devushka krasivaja.
'the girl beautiful'

The second plank of this analysis concerns semantics: the copula is claimed not to contribute anything to the meaning of the sentence, but to be a mere "supportive device, functioning as a carrier for tense, mood, aspect, and possibly other distinctions" (Hengeveld 1992: 33), a claim that can be traced back to Frege, who calls the copula a "bloßes Formwort der Aussage" (in Angelelli 1990: 168).

Both arguments must be subjected to critical scrutiny, though. The cross-linguistic evidence is more complex and less straightforward than (15) seems to suggest. Languages such as Turkish and Russian do not employ a copula in the present tense, but in the past tense a copula is optional in Turkish and required in Russian (16):

(16) Devushka **byla** krasivaja.
'the girl was beautiful'

The only difference between English and Russian with respect to copula structures is that English requires an overt copula in all sentences, while Russian does not use a phonologically independent morpheme in copula sentences that are unmarked for tense and mood. If we assume the existence of a 'zero copula' in the present tense, nothing prevents us from taking this copula to select NP and XP as its complements. Whatever merits an analysis with zero morphemes may have, we do not really need it in order to dismiss the typological argument. Constructions are language-specific entities, so the structure of a pattern in one language cannot be used to explain the structure of a related pattern in another language: "We are in danger here of making one language fit the mould of others and/or of ignoring the surface syntactic patterns in our zeal to appreciate (cross-language) semantic patterns" (Allerton 1982: 38).

This leaves us with the semantic argument that the copula does not have any lexical content and therefore must be treated as an auxiliary. No one would claim that the semantics of the copula are particularly rich, but it can be argued that the relationship between the subject and the postverbal phrase is effected by the copula, which "expresses the sense of the mathematical equal sign" (Verspoor and Sauter 2000: 25). It is not the case that the presumed nonverbal predicate simply selects the subject argument itself, but the copula is needed to act as a link attaching the property expressed by the postverbal phrase to the subject NP. That the verb in copula sentences is more than just a dummy carrier of tense and mood can be demonstrated by taking a closer look at the paradigmatic options of the copula. Apart from the default copula *be*, we also find verbs such as *become*, *remain*, *seem*, and *look* in copula constructions. While *become* and *remain* may be treated as quasi-auxiliaries because they mainly contribute

aspectual, not lexical meaning to the sentence (Hengefeld 1992: 36)[22], *seem* expresses the epistemic stance of the speaker, who can use this verb to mark a particular degree of certainty (Biber *et al.* 1999: 439-40; Schopf 1976: 37). On the basis of structures like *He seems to be angry* and *It seems that he is angry*, Hengeveld claims that in *He seems angry*, the non-verbal predicate *angry* and its subject argument *He* constitute a reduced clause, with the 'pseudo-copula' *seem* acting as a predicate taking the reduced clause as its propositional argument (1992: 39-40). *Seem* is consequently argued not to be an auxiliary, but a monovalent predicate selecting the verbless clause *He angry* (Hengeveld 1992: 40).

Yet Hengeveld's solution fares rather poorly once we attempt to apply the same reasoning to sentences with sensory copula verbs such as *look*, *feel*, or *taste*, which indicate the perceptual basis of the speaker's judgement (Biber *et al.* 1999: 442). A sentence like *The milk tastes sour* cannot be regarded as containing a reduced clause (cf. **The milk tastes to be sour*; **It tastes that the milk is sour*), and Hengeveld must admit that sensory copula verbs are "clearly lexical in nature" and bivalent, selecting a subject argument and a postverbal argument (1992: 42). It is not consistent, however, to analyse *seem* as a lexical verb selecting a verbless proposition and *taste* as a lexical verb taking two phrasal arguments, because they are semantically similar in that the former expresses an evaluation on a mental basis and the latter on a sensory basis. Moreover, Hengeveld's solution forces us to treat the syntax of verbs like *be/remain*, *seem*, and *taste* entirely differently (as auxiliary, monovalent, and bivalent, respectively), which misses our intuition that all of these verbs relate some property to the subject (*The milk was/seemed/tasted bad*).

One final argument against Hengeveld's analysis concerns identifying or equative sentences such as *His girlfriend is the woman sitting on the sofa* and locative sentences such as *John is in the garden*. In these examples, the postverbal phrase does not denote a characteristic of the subject, but helps to identify or localise it. *Be* clearly has a semantic effect in such cases (Allerton 1982: 87-8; Cann 1993: 34; Halliday 1967: 66-7; Huddleston and Pullum 2002: 252), selecting two referring participants as its complements.[23] I hypothesise that equative and locative sentences can be regarded as the limiting cases of a predication-reference continuum in copula clauses. At the predicative end of this continuum, we find the

[22] The distinction between 'aspectual' and 'lexical' meaning demands a sceptical attitude, though. Apart from the common aspectual component, there must be other shades of meaning that distinguish the continuative copulas *remain* (*motionless*), *keep* (*fit*), *stay* (*healthy*) etc. and the ingressive ones *become* (*clear*), *get* (*angry*), *come* (*true*), *fall* (*ill*), *go* (*mad*) etc. (for details, see Biber *et al.* 1999: 441, 443-6).

[23] Strictly speaking, the subject NP is not specifically referring in an equative predication but serves as a variable that is identified by the value provided by the postverbal NP (Huddleston and Pullum 2002: 402). Nevertheless, it is possible to argue that both NPs are referential, the variable NP referring indefinitely and the value NP referring definitely. Rothstein, for instance, also regards both NPs as referential (1995: 42).

prototypical copula sentences in which the postverbal phrase attributes a property to the subject (17a). As opposed to this purely characterising construction, the subject is subsumed under a type in (17b); although the postverbal phrase does not introduce a new participant, it does refer to some conventionally established class and does not merely indicate some property of the subject. (17c), on the other hand, expresses a relation of token-token identity, in which the XP introduces a new referent that is identified with the subject; to put the matter another way, the subject is the only member of the class denoted by the postverbal phrase (Halliday 1994: 122). Halliday argues convincingly that such sentences should be analysed as transitive and not as copulative, particularly because the subject and postverbal phrase are reversible in a way that is similar to the passive transformation of transitive sentences (17c') (1994: 127).

(17) a. John is **intelligent**.
b. John is **a teacher**.
c. The man who was killed by his wife is **John**.
c'. **John** is the man who was killed by his wife.

To recapitulate, there do not seem to be any prevailing reasons for preferring an analysis of the postverbal phrase as a non-verbal predicate and of the copula as an auxiliary with no lexical content over the traditional bivalent account of copula sentences. I suggest that there is a gradient from copula to transitive clauses, with prototypical transitive sentences expressing a relation between two participants and prototypical copula sentences denoting a relation between a participant and a quality. To put this continuum on a firmer semantic basis, we can use Edward Marty's distinction between 'categorical' and 'thetic' judgements, which is currently being re-discovered in the linguistic literature (cf. Jackendoff 2002: 412-3). In a categorical judgement such as *Mary is intelligent*, the subject argument *Mary* is singled out as the topic of the clause, while the predicate *intelligent* ascribes a property to it. In a thetic judgement such as *Mary kissed one of her students*, the subject is not singled out, but is introduced as the first participant of an event, which is put in relation to the second participant expressed by the postverbal phrase. In other words, both participants in a thetic predication are introduced as new, while the topic of a categorical predication is treated as a presupposition that is commented on by the postverbal phrase. Marty calls categorical predications '*Doppelurteile*' (in Eisenmeier, Kastil and Kraus 1918: 228) because they first assert the existence of the topic and then predicate new information of it: "Wir bilden ein Doppelurteil, so oft wir an einem, gewissen Bestimmungen nach bereits bekannten, Gegenstand eine weitere Bestimmung oder Beziehung, ein bisher nicht beachtetes Moment, kurz einen neuen Teil irgendwelcher Art entdecken" (in Eisenmeier, Kastil and Kraus 1918: 239). To Marty, the expression of such a *Doppelurteil* is the main function of the copula *be*, which he therefore says may be

"inhaltlos", but not "bedeutungslos" (in Eisenmeier, Kastil and Kraus 1918: 224; see also Langacker 1987: 323).

I have belaboured the syntax and semantics of copula clauses because they, along with the transitive pattern, serve as the template for the analysis of secondary-predicate patterns in descriptive grammars. A clear understanding of this template helps to make the defects of descriptive analyses with respect to the derivative construction more readily apparent.

4.1.2 The derivative structure: complex-transitive clauses

Most descriptive grammars analyse the [NP_1 V NP_2 XP]-pattern as a trivalent structure that combines the postverbal argument types of transitive and copula clauses (table 1):

Table 1: Complex-transitive complementation as a combination of transitive and copula patterns

	transitive	**copula**
bivalent ('simple')	NP_1 V NP_2	NP V XP
trivalent ('complex')	NP_1 V NP_2 XP	

Since the [NP_1 V NP_2 XP]-pattern is transitive by virtue of having a direct object (NP_2), and trivalent or complex by virtue of having an additional postverbal argument, it is commonly called a 'complex transitive complementation pattern' in descriptive grammars (e.g. Biber *et al.* 1999: 381; Downing and Locke 2002: 94; Ek and Robat 1984: 319; Quirk *et al.* 1985: 1195). To support this discrete analysis, NP_2 and XP must be shown to exhibit the same behaviour in the complex structure as they do in simple transitive and copula clauses. The claim is indeed made that NP_2 in the complex-transitive pattern conforms to the whole catalogue of direct object characteristics illustrated in 3.1: it occupies the immediately postverbal position, is realised by an NP, shows accusative case if it is pronominal (18a), and moves to the subject position in the passive equivalent of the sentence (18b) (e.g. Downing and Locke 2002: 95; Huddleston and Pullum 2002: 245-7). Moreover, it must be turned into a reflexive pronoun if it is co-referential with the subject (18c).

(18) a. Mary considers **John/him** a fool.
b. **Access in contravention of these rules** will be considered a serious offence (BNC B3A: 531).
c. His wife, Belinda, ... has been brought up to consider **herself** a deprived aristocrat (BNC B0Y: 1233).

Givòn tentatively suggests that the XP in the complex pattern is a "second direct object", which is removed from "the transitive direct object prototype" (1993: 125), but most grammarians identify this phrase with the postverbal complement of a copula clause instead. Again, a number of syntactic tests are particularised in order to prove this syntactic identity: the XP can be realised categorially by an AP (and PP) as well as an NP (19a) (e.g. Aarts and

Aarts 1988: 141-2; Emons 1974: 138-9; Huddleston 1984: 194); it cannot be preposed in the passive (19b) (e.g. Emons 1974: 138; Huddleston 1984: 194-5); and it agrees in number with the direct object NP (19c, c') (e.g. Downing and Locke 2002: 53; Emons 1974: 137-9; Huddleston 1984: 195):

(19) a. To choose to study 'arts' rather than 'science' is to make a statement about the values one considers **important** (BNC FA6: 432).
b. ***A fool** is considered John by Mary.
c. He considers **himself an expert** on the subject now (BNC EVC: 2362).
c'. Most people consider **themselves experts** on marriage on the basis of their own experience (BNC BNF: 15).

From a semantic point of view, the relation between the XP and the direct object appears to be the same as that between the XP and the subject in a copula clause (20a, b) (Biber *et al.* 1999: 130; Burton-Roberts 1986: 81; Matthews 1981: 184). Even more strikingly, the passive version of a complex-transitive clause (20c) is arguably a copula-like structure (Aarts and Aarts 1988: 142; Scheurweghs 1959: 28; Smith 1977: 329).

(20) a. Mary considers [John] [a fool.]
b. [John] is [a fool.]
c. [John] is considered [a fool.]

The semantic similarities between the XP in copula and complex-transitive constructions are captured by the term 'intensive': while direct objects are "extensive to/ discrete from the subject" (Morley 1991: 299), XPs "relate back to and are thus intensive to the subject or object" (Morley 1991: 301; see also Downing and Locke 2002: 53; Ek and Robat 1984: 320-1; Quirk *et al.* 1972: 38). The intensive/extensive dimension, coupled with the transitivity dimension, allows a systematic cross-tabulation of the discrete complementation patterns that are regularly postulated in descriptive grammars (e.g. Huddleston and Pullum 2002: 218; Young 1980: 117):

Table 2: The system of canonical clause types in descriptive grammars

	extensive	**intensive**
intransitive	NP V (*John died.*)	NP V XP (*John is dead.*)
monotransitive	NP_1 V NP_2 (*Mary killed John.*)	NP_1 V NP_2 XP (*Mary considers John a fool.*)
ditransitive	NP_1 V NP_2 NP_3 (*Bob offered John no help.*)	—

In this system, patterns without a direct object (NP_2) are called 'intransitive'; this includes the canonical intransitive structure ('intransitive extensive') as well as the copula pattern ('intransitive intensive'). Structures with one object are monotransitive; the canonical transitive construction is 'transitive extensive' (or 'transitive non-intensive'), while the complex-transitive

structure is 'transitive intensive' (Young 1980: 117). In the ditransitive pattern, both postverbal complements are extensive, i.e. objects.

While NP_2 in monotransitive patterns is invariably called a 'direct object', there is no generally accepted syntactic term for the function of the XP in intensive constructions. The most familiar functional label is 'subject/object complement' (e.g. Brown and Miller 1991: 333; Francis, Hunston and Manning 1996: 277; Quirk *et al.* 1985: 54-5; Sinclair 1990: 180), which is used to convey the sense that the XP somehow completes the meaning of the subject in an intransitive structure or the object in a monotransitive pattern by characterising it more closely (Downing and Locke 2002: 53). Yet this term is, despite its wide use, misguided. In a sentence such as *Mary considers John a fool*, *a fool* is not syntactically a complement of the object *John*, nor does it, strictly speaking, complement its meaning (Aarts 1992: 36). Moreover, the term 'complement' is now standardly used in opposition to 'adjunct' and thus applies to every syntactic argument of a verb, so that subjects and objects are complements as well in this broader sense. More recent descriptive grammars have therefore given up the term 'subject/object complement' despite their general tendency to be "terminologically conservative" (Biber *et al.* 1999: 7).

A related term that avoids the ambiguous label 'complement' is 'subject/object attribute', which likewise draws attention to the fact that the XP describes some kind of attribute of the subject or object (e.g. Aarts and Aarts 1988: 140-1; Verspoor and Sauter 2000: 21). The term 'attribute', however, creates new confusion: while it is used semantically in 'subject/object attribute', it is also widely used syntactically to designate additional, optional elements in a phrase (e.g. in 'attributive adjective').

The label that seems to have won the field is 'predicative complement' (e.g. Huddleston and Pullum 2002: 217; Levin 1993: 180). 'Complement' is used here in its wider syntactic sense, so that a predicative complement contrasts with a direct object complement, for instance. 'Predicative' is a semantic characteristic that emphasises the intensive, predicative relation between the XP and the subject or object (Huddleston and Pullum 2002: 252).[24] While 'predicative complement' is less ambiguous than 'subject/object complement' and 'subject/object attribute', it is a rather clumsy term when used to differentiate XPs in intransitive and complex-transitive constructions; Huddleston and Pullum, for example, speak of "subject-oriented" vs. "object-oriented" predicative complements (2002: 217). This terminological inconvenience seems to be one of the main reasons for the shorter names 'subject predicative'

[24] The similar term 'predicate complement' (XComp) is also used in LFG, and is explicitly employed there in opposition to 'predicative adjuncts' as in *Mary looked down,* ***ashamed of herself*** (Bresnan 2001: 267).

and 'object predicative' (e.g. Allerton 1982: 81; Biber *et al.* 1999: 126, 130; Burton-Roberts 1986: 81). The problem with these latter terms, on the other hand, is their purely semantic content because 'predicative' refers to the intensive relationship between the XP and the subject or object, and there is no additional syntactic component such as 'complement' in these names.

While all of the terminological proposals discussed so far at least share more or less the same analysis of XPs, we also find labels that reflect somewhat different assumptions. The term 'predicative adjunct to the subject/object' (e.g. Scheurweghs 1959: 27; Zandvoort 1966: 203), for instance, emphasises the common feature of XPs and attributive adjectives or adverbials to provide additional information on some element of the sentence (Zandvoort 1966: 203). Similarly, the term 'adverbial complement' (e.g. Wekker and Haegeman 1985: 79) conveys the sense that an XP, like an adverbial, "narrows down the activity" of the verb (Wekker and Haegeman 1985: 79).

Descriptive grammars have, incidentally, not really made much progress in their terminological conventions with regard to complex-transitive constructions. Onions, for instance, called XP a "Predicate Adjective or Noun referring to the Object" as early as 1904 (41), and Curme already used the term "predicate complement" in 1931 (26). The lack of agreement on terminology is actually symptomatic of a deeper uncertainty behind the analysis of the [NP_1 V NP_2 XP]-pattern itself.

4.1.3 Analytical problems of the complex-transitive complementation analysis

As with all discrete analyses, it would be obtuse to place unquestioning faith in the empirical validity of such building-blocks as 'direct object' or 'predicative complement to the object' on the strength of a few defining syntactic tests. Some common distributional mismatches with regard to direct objects have already been illustrated in chapter 3.1; the following sentences provide conflicting evidence for predicative complements to the object: the XP in (21a) can only be realised by an AP, and that in (21a') only by an NP, so that we do not find the typical categorial commutation possibilities of predicative complements here; in (21b), there is no number agreement between the direct object and the predicative complement.

(21) a. The waitress wiped the table **clean**.
a'. They elected John Smith **president**.
b. Bob considers **John and Mary a nuisance**.

In itself, such mismatches are not enough to disconfirm the notion 'predicative complement to the object' because they could be explained away as exceptions or special cases. What must primarily be targeted is the claim that NP_2 and XP in a complex-transitive pattern are the same building-blocks as the direct object in a transitive and the predicative complement in a copula

structure. That this hypothesis does not hold up will be demonstrated by a comparison of the XPs in copula and complex-transitive patterns.

To begin with, it seems to be obvious that the positional criterion must be dismissed if XPs in simple and complex structures are to be considered under the umbrella term 'predicative complement' because only the XP in a copula pattern occupies the immediately postverbal position, while that in a complex-transitive construction is usually placed after the direct object. More importantly, the XP in the complex pattern does not admit of the same range of semantic fillers as the XP in copula clauses. While characterising attributes are possible in both structures (22a), classifying and identity phrases are doubtful in the complex pattern (22b, c), and locative phrases are clearly out in this structure (22d):

(22) a. John is **intelligent**./ I consider John **intelligent**.
b. John is **a teacher**./ ?I consider John **a teacher**. (ROS: 45)
c. John is **the director of this bank**./ ?I consider John **the director of this bank**. (ROS: 45)
d. John is **in the garden**./ *I consider John **in the garden**. (ROS: 91)

The reason behind these distributional differences seems to be that copula and complex-transitive patterns constitute completely different constructions semantically. The copula sentences can all be said to denote categorical judgements, in which the already known entity 'John' is more closely characterised with respect to his attributes, his profession, his identity, and his location, yet sentences with complex-transitive complementation do not appear to be best described as *Doppelurteile*. While it may at least be arguable that the direct object after verbs like *consider* serves as some sort of presupposition for the predicative complement, in other complex-transitive clauses both the NP_2 and the XP can introduce new information (cf. *The waitress wiped a dirty table clean*; *John ate his soup hot*).

That brings us to the main objection which must be raised against grafting the notion 'predicative complement' in copula clauses onto that in complex-transitive sentences. Since descriptive grammars analyse NP_2 and XP as two postverbal arguments in the complex pattern, they must explain where the predicative link between these two phrases stems from. The predicative relation between the subject and the XP in a copula clause does not pose the same problems if it is assumed that a categorical predication is established by the copula. Quirk *et al.* merely provide a description of the predicative link between NP and XP: they analyse the NP 'sandwiched' between the verb and the XP as being simultaneously a direct object of the verb and a subject of the predicative complement, and attribute these bilateral associations of the NP to "a fusion of the monotransitive and intensive types of complementation" (1972: 850):

(23) We considered Bill a friend

$$\sim \begin{cases} \text{We considered Bill} \\ \text{Bill was a friend} \end{cases}$$ (Quirk *et al.* 1972 : 850)

This fusion analysis seems to offer a transparent description of the linguistic situation and has therefore been readily seized on by many descriptive grammarians (Burton-Roberts 1986: 81; Downing and Locke 2002: 94; Matthews 1981: 185; Young: 1980: 130). It has, however, no explanatory power: Quirk *et al*. evade the question why the complex pattern can establish a predicative relationship without a copula verb, something that is not possible in the simple pattern (**Bill a friend*). Quirk *et al.*'s analysis is also unconvincing semantically because it must be doubted that the meaning of *consider* in *We considered Bill a friend* is the same as that in *We considered Bill* — whatever the latter sentence may mean anyway.[25]

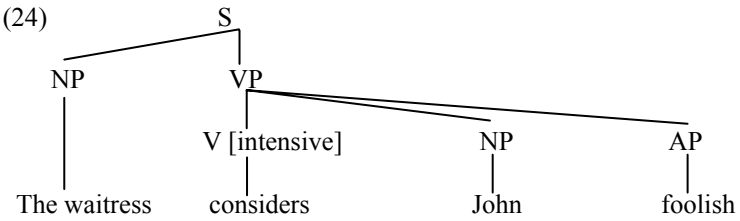
Other descriptive grammarians have tried to provide an explanation for the additional predicative relationship, but the solutions that have been put forward so far are all opportunistic. The most extreme position possible is championed in some older publications, where complex-transitive verbs like *consider* are tentatively lumped together with copulas (e.g. Koziol and Hüttenbrenner 1956: 26; Smith 1977: 327-8). This approach has already been criticised as impermissible by Poutsma because verbs such as *consider*, let alone *wipe* or *eat*, exhibit full lexical meanings (1928: 341) and do not establish the categorical predication typical of copulas. A less bold position is taken by a number of contemporary grammarians, who maintain that a copula is understood in complex-transitive sentences and can be brought out by a paraphrase (Aarts and Aarts 1988: 141; Downing and Locke 2002: 94; Long and Long 1971: 8; Radden 1989: 426). Yet this solution cannot avoid two pitfalls: firstly, it is highly doubtful that in the sentence "*We found the new secretary very helpful*" it is implied that "the new secretary **was** very helpful" (Downing and Locke 2002: 53), or that "*They elect someone chairman*" and "*I call that nothing*" can be paraphrased by the copula sentences "*Someone becomes chairman*" and "*That is nothing*" (Long and Long 1971: 8) — it is a specious kind of semantic simplicity to assume that these categorical judgements are really entailed by the respective complex-transitive sentences. Secondly, if descriptive grammarians argue that the NP_2 XP-string is synonymous with a copula clause, they come dangerously close to discounting their non-clausal, ternary analysis without being aware of it. Some syntacticians even go so far as to speculate that a copula is not only understood between the two postverbal phrases,

[25] A similarly stipulative explanation is provided in LFG. Here, a predicate complement (XComp) is claimed to be an unsaturated predicative phrase that needs a subject. Since an XComp cannot take a subject itself, it is dependent on another argument in the sentence that can serve as its subject. An additional functional control relation then identifies the direct object argument of the main predicate as the subject of the XComp, so that this argument is shared by the main verb and by the XComp (Bresnan 2001: 270-2). There is, however, no explanation given for the hypothesised control relation.

but that it could be considered present underlyingly (e.g. Brown and Miller 1991: 333; Givòn 1993: 125-6). Since descriptive grammarians do not normally work with different representational levels, such proposals are usually hedged with 'ifs' and 'maybes'; in any case, the idea of an underlying copula does not constitute an improvement over that of an understood copula.

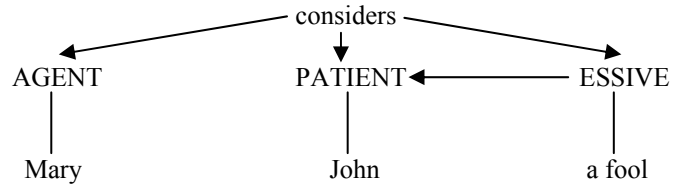
Attempts to provide a solution to this analytical dilemma without recourse to a hidden copula have on the whole been unsatisfactory as well. One procedure that is sometimes adopted is to mark the main verb with some sort of "intensive sub-categorisation feature" that is claimed to be responsible for the additional predicative relation between its two postverbal arguments (e.g. Burton-Roberts 1986: 81-2):

(24)



This subcategorisation feature is purely stipulative, though, and does not derive support from any independent principle. Another possible approach lies in postulating some characteristic semantic role, which is frequently called 'ESSIVE' (from Latin *esse* 'to be') (e.g. Radden 1989: 451-9), but also goes under various other names such as, for instance, 'ATTRIBUTE' (Biber *et al.* 1999: 130). ESSIVE is a semantic role which designates a characterising relation with another phrase in the sentence, the referent of which must necessarily be co-referential with it. This can be illustrated with the sentence *Mary considers John a fool*:

(25)



Again, however, the additional semantic relation between the direct object and the predicative complement is not explained but only attributed to some special semantic role. The intensive relationship between the direct object and the predicative complement in a complex- transitive pattern remains a primitive, unexplained notion, whether we attribute it to an underlying copula, to an intensive subcategorisation feature of the verb or to some intensive property of a semantic role.

Even setting aside the mercurial conceptual basis of the complex-transitive pattern, the analysis behind it creates a number of serious difficulties that threaten to dismantle crucial tenets of the discreteness paradigm descriptive grammars work in. In the first place, the postverbal NP has an indeterminate status in the complex pattern as syntactic object of the main

verb and semantic subject of the predicative complement. Zandvoort therefore represents sentences with complex-transitive complementation as "S + P (o/s + p), in which S stands for the subject of the sentence, P for the (verbal) predicate, o/s for the object, which at the same time functions as the subject of the p (the predicative complement; H.S.)" (1966: 203).

A similar non-isomorphism between syntax and semantics pertains to the main verb because there are "two semantic predications encoded within a single syntactic subject-predicate construction" (Huddleston and Pullum 2002: 252; cf. also Emons 1974: 137 and Huddleston 1984: 195). There is a predication between the main verb and its three arguments — the subject, direct object, and predicative complement —, as well as between the predicative complement and its single argument, the NP_2. Syntactically, however, there is only one clause because the predicative link between NP_2 and XP is not established by a verb and the two postverbal elements can also be separated from each other, for example in the passive (*He was considered a fool*). While most formal grammarians would recoil from such a lack of syntax-semantics homomorphism, Quirk *et al.* try to see its positive side by stating that "[t]his divisibility into two elements of a semantically clausal construction following the verb is the defining property of complex-transitive complementation" (1985: 1195). Yet such a solution does not fit neatly into a discrete syntactic framework. The main verb sits uncomfortably between a bivalent and a trivalent predicate: if the two postverbal phrases are considered to be separate arguments of the verb, we would have to posit a trivalent predicate, but if NP_2 is the subject of XP in a copula-like subordinate clause, the main predicate would only be bivalent. Allerton comes close to realising that such discrete notions as 'subject' and 'direct object' or 'bivalent verb' and 'trivalent verb' break down in a complex-transitive analysis when he says that "verb, object and predicative [are] each linked to the others and the subject [is] also involved" (1982: 109), but he does fall back on the paradigm of discrete grammar again when he concludes that "it is best to regard such verbs as trivalent" (1982: 109).

The most central discrete notion that is undermined by the complex-transitive analysis is the distinction between 'predicate' and 'argument'. In the standard trivalent analysis, the predicative complement to the object is an argument of the main predicate, but it is at the same time a monovalent predicate that selects NP_2 as its 'subject' argument. Huddleston and Pullum admit that "[t]he relation between semantic and syntactic structure is less straightforward" than in a monotransitive clause because "[s]yntactically predicatives are complements, but semantically they are comparable to verbs in predicator function" (2002: 252). The predicative complement must be regarded as an argument of the matrix verb mainly for reasons of valency: a verb such as *consider* cannot be construed with a subject and direct object only (**I*

consider John), but seems to require an additional argument (*I consider John a fool*). At the same time, predicative complements behave like predicates and not like complements, as even a cursory look at some syntactic tests reveals: unlike a direct object, a predicative complement cannot serve as the antecedent for a personal pronoun (26a vs. a') and cannot be relativised or questioned by *who*[26] (26b, c vs. b', c') (Contreras 1987: 237; Emonds 1985: 269-72).

(26) a. *The teacher considers him **a rock**, because **it** never stands up.
(from Emonds 1985: 271)
a'. He didn't carry **the rock** because **it** was too heavy.
b. *I consider John the expert **who** I would have liked to be.
b'. He met the expert **who** I had spoken to yesterday.
c. ***Who** do you consider him? — An expert.
c'. **Who** did you meet? — An expert.

What these tests indicate is that the predicative complement does not denote a participant in the event that could be pronominalised, relativised or asked for. In this light, the diagnostic tests that are standardly used to distinguish predicative complements from direct objects turn out to be not so much tests differentiating two kinds of complements, but rather tests that reveal the predicative status of the XP: since both object and subject are complements in the sense that they refer to participants in the clause, they can be aligned differently by the voice system, whereas XP, which is of the different conceptual type 'predicate', remains unaffected by such transformations (cf. 19b) (Huddleston and Pullum 2002: 253-4). The fact that the direct object refers to a participant in the clause also explains why it can select its number independently of other complements (Seppänen and Herriman 1997: 136-7); the XP, on the other hand, is like a verbal predicate in that it shows number agreement with its 'subject' argument NP_2 (cf. 19c, c').[27]

Furthermore, since the XP denotes properties and not participants, it can also be realised by an AP, while a direct object must be an NP in order to pick out a participant from the universe of discourse (Huddleston and Pullum 2002: 253; Seppänen and Herriman 1997: 136). When the XP is realised by an NP, this NP behaves similarly to adjectives in some interesting respects, while a direct object NP shows more centrally nominal behaviour. Unlike direct ob-

[26] The relativisers *that* and *which* and the interrogative pronoun *what* are possible here (*I consider John the expert that/which I would have liked to be*; *What do you consider John?*). While *who* refers to an animate antecedent, these pronouns refer to inanimate antecedents, including non-referring predicative concepts.

[27] Similarly, the direct object also has a case form that distinguishes it from other complements, while the XP agrees in case with the object. The high degree of case syncretism in modern English masks this relation, but it can be shown to have existed in the morphologically richer case system of Old English (cf. a) and to still hold in modern German (cf. b):

a. Buton ic openlice gecyþe ðæt ic God sylfa sy, ne onmun ðu **me** [acc.] nanre are **wyrþne** [acc.]. (Blickl. Hom. 181, 36; quoted from Visser 1963: 560; my emphasis)
'Unless I should say openly that I am God myself, do not consider me worthy of any honour.' (my translation)
b. Ich finde **ihn** ein**en** attraktiv**en** Mann.

jects, an NP and an AP can be coordinated as predicative complements to the object (27a vs. a'); like predicative adjectives but unlike direct objects, NPs in the XP-position can be referred to by *so* (27b vs. b') (Contreras 1987: 237), and can take adverbs of degree (27c vs. c') (Contreras 1987: 237; Goodall 1987: 45-6).

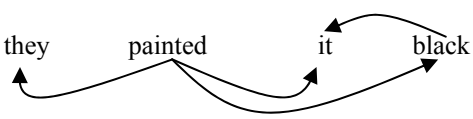
(27) a. It would put them in an impossible position if a legally-binding Living Will demanded what they considered **unethical** or **bad medical practice** (BNC C8G: 106).
a'. *He rejects **bad medical practice** and **unethical**.
b. I consider John an expert, **more so than** I do Mary. (ROS: 15)
b'. ??I met experts, **more so than** I did nonspecialists. (ROS: 55)
c. I consider John an expert **enough** to understand this phenomenon. (ROS: 30)/ I consider John **very much** an expert. (ROS: 15)/ I consider him an expert **through and through**. (ROS: 15)/ I consider him **more** a liar **than** an expert. (ROS: 15)
c'. *I met an expert **enough** to explain this phenomenon to me. (ROS: 90)/ *I met **very much** an expert. (ROS: 80)/ *I met an expert **through and through**. (ROS: 75)/ *I met **more** a liar **than** an expert. (ROS: 75)

Similar tests can be replicated for PPs as predicative complements as opposed to PPs as prepositional objects. A predicative PP cannot be referred to by a pronoun (28a vs. a') and it also exhibits the gradability that is typical of predicative adjectives (28b vs. b').

(28) a. *I consider him **off his rocker** because his father has also been **there**.
a'. John put the vase **on the table**. **There** he noticed a letter from Mary.
b. I consider him **very much** off his rocker. (ROS: 30)/ I consider him off his rocker, **more so than** I do Mary. (ROS: 25)
c'. *He put the vase **very much** on the table. (ROS: 90)/ *He put the vase on the table, **more so than** did Mary. (ROS: 85)

All these tests suggest that XPs are predicative in nature, whether they are realised by a predicative AP or by NPs/PPs, which are not normally thought to be predicative categories (for a functional account of syntactic categories, see 11.4.6.2). When predicative complements are identified as predicates, however, the complex-transitive pattern is singular in containing a complement that is at the same time a predicate. Matthews gives a diagrammatic representation of the "network in which the complements which follow the matrix verb are themselves in a predicative relationship" (1981: 185):

(29)



A weakening of the distinction between argument and predicate would have conceptual consequences for discrete grammars far beyond the treatment of complex-transitive complementation patterns. Aarts, working from the perspective of generative grammar, rejects the complex-transitive analysis by saying that the predicative complement "is a *predicate* and cannot therefore syntactically be a complement" (1992: 36). Similarly, linguistic philosophers such as Chierchia and Turner maintain that arguments (which they call 'individuals') and predicates (which they call 'properties') must be sharply differentiated: properties "are intrinsically 'in-

complete' or 'unsaturated' structures. An act of predication is the 'completion' or 'saturation' of these structures ... Qua unsaturated structures, properties are not individuals and cannot saturate other properties" (1988: 264). More simply put, a predicate cannot at the same time be a complement, so that 'predicative complement' is actually a contradiction in terms. The complex-transitive pattern is an erratic syntactic entity because it requires non-discrete notions (NP_2 is a subject and a direct object at the same time; the main verb is bivalent and trivalent at the same time; the complex-transitive pattern is monoclausal and biclausal at the same time; XP is a complement and a predicate at the same time) within a syntactic framework that crucially relies on discrete linguistic building-blocks.

4.1.4 Problems of classifying complex-transitive complementation patterns

Thus far, we have pointed out the analytical quandaries created by the treatment of the [NP_1 V NP_2 XP]-structure as complex-transitive. The focus in this chapter is on the attempts of descriptive grammars to account for the various semantic relationships underlying this pattern. In most grammars, classifications of complex-transitive structures are not primarily based on semantic, but on formal terms, with the alternative categorial realisation possibilities of XP serving as the basis of subclassification. Quirk *et al.*, for instance, make a distinction between complex-transitive verbs that can take an AP complement and those that take an NP complement (1985: 1196-9). Since many complex-transitive verbs allow both categorial realisations, these verbs must be listed twice, however.

In preference to this rather redundant subclassification, in other grammars complex-transitive verbs are categorised according to their semantics first, and only additionally according to the categories the XP can be realised by. Such semantic classifications usually distinguish between mental verbs (e.g. *consider* (*a success*), *find* (*attractive*)), verbs of making (e.g. *make* (*happy*), *wipe* (*clean*)), verbs of appointing (*appoint* (*director*), *elect* (*president*)), verbs of naming (*name* (*Mary*), *dub* (*'the Boss'*)), verbs such as *eat* (*hot*) and *bury* (*alive*), as well as other, more marginal semantic groups, e.g. verbs of wanting (*want* (*dead or alive*), *like* (*hot*)) or verbs of declaring (*declare* (*the winner*), *report* (*dead*)) (e.g. Downing and Locke 2002: 94; Francis, Hunston and Manning 1996: 277, 281-5; Jespersen 1940: 9-24; Levin 1993: 181-3; Visser 1963: 553-86).

Such semantic classifications tend to result in a comparatively large number of classes and subclasses (e.g. 16 main classes in Jespersen's classification (1940: 9-24), and 10 in Visser's classification (1963: 553-86)), there being no basis for establishing the right degree of semantic granularity. To counter this particularising tendency, two semantic macro-groups are frequently set up that generalise over a great number of semantic distinctions. The two seman-

tic groups are mostly referred to as 'current' and 'resulting' (e.g. Quirk *et al.* 1985: 1196), or 'depictive' and 'resultative' (e.g. Huddleston and Pullum 2002: 251). This is a time-honoured aspectual distinction that was already made by Onions (1904: 42), Jespersen (1940: 9, 18), and Hornby (1954: 32-3). Again, we do not have to search far for a model of these two semantic groups: current/depictive complex-transitive verbs, e.g. *consider*, are compared to stative or continuative copulas such as *be* and *remain*, while resulting/resultative complex-transitive verbs, e.g. *render*, are regarded as parallel to ingressive copulas such as *become* and *get* (Allerton 1982: 122-3; Biber *et al.* 1999: 151). These similarities seem to reinforce descriptive grammarians' assumption that predicative complements in transitive and intransitive complementation patterns are, at bottom, the same syntactic building-blocks (Huddleston and Pullum 2002: 251):

Table 3: Semantic groups of intransitive and transitive intensive patterns

	intransitive	**transitive**
depictive	*John seemed nervous.*	*Mary considered John foolish.*
resultative	*Mary became angry.*	*The waitress wiped the table clean.*

Yet this is a spurious systematisation that cannot be upheld in this form. While it might be argued that a verb such as *consider* selects the XP (30a), it is doubtful that a verb like *wipe* (30b), and extremely improbable that a verb such as *eat* (30c) requires the XP as its complement:

(30)

a. [Mary] **considers** [John] [**a fool**].

b. [The waitress] **wiped** [the table] [**clean**]. **?**

c. [John] **ate** [the soup] [**hot**]. **??**

It seems to be more reasonable to entertain an analysis in which *wipe* and particularly *eat* are bivalent verbs that only select their subjects and direct objects, but not the predicative XPs, which are non-obligatory elements that could be deleted without making the sentences ungrammatical or radically changing their meaning. These XPs should therefore not be called 'predicative complements', but rather 'predicative adjuncts'. This is indeed the direction taken by a variety of grammars, which regard the XP in (30b) as a resultative adjunct and that in (30c) as a depictive adjunct.

There are, however, two drawbacks to the adjunct analysis: firstly, the parallelism with the copula sentences breaks down if predicative adjuncts are posited alongside predicative

complements because the XPs in intransitive-intensive sentences can never be omitted (cf. *The table becomes *(clean)*; *The soup is *(hot)*).[28] Secondly, the predicative link between the direct object and the predicative phrase demands a new solution. As has been outlined above, this link is explained either by an intensive subcategorisation feature of the main verb or by the ESSIVE role of the predicative complement; to account for the semantic differences illustrated in table 3, we would have to presuppose a depictive and a resultative ESSIVE role. But if the predicative phrases in (30b-c) are adjuncts, as the omissibility criterion seems to suggest, they cannot be assigned thematic roles by the main verbs, and the intensive relationship between the postverbal phrases remains a mystery.

The discrete machinery of descriptive grammars is ill-equipped to handle this problem. It will not do to call the XPs in (30b, c) 'optional adverbials' (Brown and Miller 1991: 334; Quirk *et al*. 1985: 1197-8) because there is no subject/predicate relationship between the complement of a verb and an adverbial. Moreover, there seem to be at least some selectional restrictions between the verb and the XP (31a, b), which could not be explained by an adverbial analysis.

(31) a. The waitress wiped the table clean/ *stained. (ROS: 93)
b. Mary shot the tiger dead/ *wounded. (ROS: 100)

Such semantic restrictions are used by other grammarians to toy with an analysis of resultative XPs as complements (e.g. Huddleston and Pullum 2002: 262; Wechsler 1997: 315). This strategy requires an opportunistic selection of complement/adjunct criteria, though (cf. Dowty 2000: 53-4; Haegeman and Guéron 1999: 28-9; Huddleston and Pullum 2002: 219-228; Tenny 1994: 174-5). Resultative XPs fulfil certain complement criteria in that they are semantically restricted (cf. 31), cannot be recursively combined within a sentence (cf. **John painted the door blue*, *sticky and beautiful*), and are usually restricted to one position (cf. (**Clean*) *she wiped the tables* (*clean*)). On the other hand, the facts that the XPs in (31) are omissible and that they are typically realised by an AP that designates a property of the direct object point to an adjunct analysis. To treat resultative phrases as complements therefore requires an opportunistic selection of complement/adjunct criteria (table 4):

[28] The notation 'AB*(C)' means that ABC is acceptable, but AB is ungrammatical, i.e. the material in the parentheses cannot be removed.

Table 4: Complement/adjunct characteristics of resultative XP

	semantic restrictions	only one of a kind possible	positionally restricted	optionality	realised by a modifying AP
complement criteria	√	√	√		
adjunct criteria				√	√

Moreover, while selectional restrictions might conceivably be posited for resultatives, they are rarer and more difficult to describe for depictives. To treat *hot* in *John ate the soup hot* or *young* in *He died young* as a predicative complement (to the object or to the subject) requires not only an opportunistic, but arbitrary argumentation, such as the one given by Downing and Locke: "We shall consider such constituents as Complements on the strength of the possible paraphrase containing *be*" (2002: 50); in other words, XPs must be complements despite all indications to the contrary because otherwise we could not explain the additional predicative link with NP_1or NP_2. To make matters worse, there are also cases in which both the XP and the NP_2 are optional, such as in *John talked himself hoarse*. As we will see in the following chapters, such special cases are not amenable to a discrete treatment at all.

For this reason, it is not surprising that many, if not most, descriptive grammarians simply remain silent about semantic distinctions in their discussions of the complex-transitive pattern. To give just two examples, Francis, Hunston and Manning (1996: 281) treat *consider* (*implacable*) and *scrub* (*clean*) together; similarly, Young (1980: 130-1) does not make an analytical distinction between *found* (*difficult*) and *received* (*damaged*). The careful circumnavigation of the different semantic relationships underlying secondary-predicate constructions is, however, no less opportunistic than the decision to base the difference on some sort of weakened complement/adjunct-distinction.

4.1.5 Discarding the distinction between objects and predicative complements — a way out?

Despite the many difficulties besetting the syntactic function 'predicative complement to the object', it has struck very firm roots in descriptive grammars. Seppänen and Herriman are rather the exception when they try to offer a corrective to the traditional understanding within a descriptive framework; in their article they claim that the function 'predicative complement' could be done away with and simply be subsumed under that of 'direct object' (1997: 144-5). As a point of departure, they discuss the unusual structure behind the sentence *She made him a good wife*. In this sentence, there is an intensive relationship between the XP *a good wife* and the subject as in a copula clause, but there is an additional NP between these two phrases

(Quirk *et al.* 1972: 851). Seppänen and Herriman argue that *a good wife* is not a predicative complement to the subject but a direct object, with *him* being an ordinary indirect object (1997: 144). They then go on to tentatively suggest that the structural description they postulate for this sentence, 'subject – verb - indirect object - direct object', can also be applied to some of the sentences which are standardly analysed as complex-transitive (1997: 145).

Their first argument concerns the fact that while there are copulas that only admit APs as predicative complements (e.g. *grow*, *get*) and copulas that admit both APs and NPs (e.g. *be*, *become*, *remain*), *make* would be unique in requiring its XP to be realised by an NP. This would necessitate "introducing a third subclass of copulas, with members admitting only NPs as predicatives" (Seppänen and Herriman 1997: 142). If *make* is analysed as a (di)transitive verb, though, the restriction to NPs would be expected (1997: 143). Secondly, a copula analysis means that *make* would be the only copula verb that could occur with an indirect object, which again "must thus be recognised as an anomaly in the grammar" (1997: 135). Yet if *make* is considered a transitive verb instead, the occurrence of an indirect object would not be unusual. As the last link in their chain of reasoning, they adduce examples where copulas are followed by referential phrases such as "*The man standing in front of me is Peter Whitelaw*" (1997: 138), and other cases where the presumed predicative complement does not fulfil typical predicative criteria; the phrase *a good wife*, for instance, can be moved to the subject in a passive construction that is "easily interpretable though in practice avoided as strained": ??*A good wife was made by her* (Seppänen and Herriman 1997: 143).

While I am truly sympathetic towards attempts to dismantle discrete syntactic notions, I do not think that Seppänen and Herriman's arguments are substantial enough to discard the function 'predicative complement' from the analysis of copula and complex-transitive clauses in one sweep. The '*good wife*'-structure cannot, I believe, serve as the motor for deconstructing the notion 'predicative complement' because it is an exceptional construction whose unusual syntactic properties should be accounted for instead. The fact that only NPs are allowed as predicative complements results from the specialised semantics of this construction, which conveys the meaning that the participants coded as the subject fulfil the functions that are typically attributed to them in an exemplary way. Since a function can only be coded by an NP and not an AP, the latter category is barred from this structure. Moreover, I submit that the immediately postverbal phrase can indeed be identified with an indirect object, but only if we see 'indirect object' as a radial, semantically diverse syntactic function. Indirect objects are not only found in the prototypical transfer sense, where they may be analysed as arguments of a trivalent predicate (e.g. *John gave Mary a book*), but can also optionally code the beneficiar-

ies of an event, as in *John baked* (*Mary*) *a cake*. The '*good wife*'-construction, which communicates the sense that the subject performs a function very well, allows the inclusion of a beneficiary of that function in one of the ways made available by English syntax (*She made* ***him*** *a good wife*; *She made a good wife* ***for him***), while the ascription of properties communicated by more central copula sentences makes the conceptualisation of a beneficiary more difficult (??*John is attractive for his wife*). Finally, I fully agree with the claim that it is not possible to draw a firm line between referential and predicative phrases, but I consider it opportunistic to say that we should therefore treat all NPs as objects. As has been suggested with regard to copula sentences above (4.1.1), it is more realistic to work with a reference-predication continuum.

The [NP_1 V NP_2 XP]-pattern has been a hard nut to crack for descriptive grammars, and I hope to have shown that it is not legitimate to simply graft the analysis of copula sentences with the semantics of categorical judgements on this syntactically and semantically divergent construction. The next two chapters will take up the issue of how the formally and functionally related [NP_1 V *to be* NP_2 XP]-structure and the [NP_1 V NP_2 *as* XP]-pattern are treated in descriptive grammars.

4.2 Treatment of the [NP_1 V NP_2 *to be* XP]-pattern in descriptive grammars

The structural closeness of the [NP_1 V NP_2 *to be* XP]-pattern to complex-transitive complementation (cf. 32) was already noticed by Onions (1904: 42) and is standardly mentioned in contemporary grammars (e.g. Biber *et al.* 1999: 199; Levin 1993: 180; Quirk *et al.* 1972: 850).

(32) a. Mary considered John a fool.
b. Mary considered John to be a fool.

(32b) is a construction on which descriptive grammars are hard pressed to say anything of substance; very often, they only list it as one of the alternatives of complex-transitive complementation without subjecting it to a detailed syntactic and semantic analysis. In structural terms, it is usually simply subsumed under one of the two more familiar infinitival patterns, the monotransitive and the object-control structures.

Infinitival complements that conform to the general structural description 'NP_2 + infinitive' are commonly thought to fall into two distinct groups according to the syntactic and semantic status of the postverbal noun phrase (e.g. Quirk *et al.* 1972: 837-8; Traugott 1992: 245). In some patterns, NP_2 can be interpreted as the direct object argument of the matrix verb and at the same time as the subject of the infinitive. Verbs requiring such a construction are known as 'object-control verbs' (33a). The idea behind this term is that the notional subject of the infinitive is controlled by, i.e. referentially identical to, the object of the main verb (Aarts

1992: 110-1). Conversely, NP_2 may only be regarded as the subject of the lower infinitival clause and not as an argument of the main verb; the matrix verb would be monotransitive in this case (33b). Visser provides a convenient cover term for both constructions, viz. "**VOSI** (= **v**erb + **o**bject/ **s**ubject + **i**nfinitive" (1973: 2234). Intuitively, then, object-control verbs are trivalent, assigning thematic roles to the subject, the object, and the infinitival complement, while monotransitive verbs are bivalent, selecting the subject and the infinitival complement, but not the postverbal noun phrase.

(33) a. [Mary] forced [John] [to leave].
b. [Mary] expected [John to leave].

The typical monotransitive verbs selecting an infinitival complement are *expect*-type verbs such as *expect*, *want*, *desire* etc., while the canonical object-control verbs are *persuade*-type verbs like *persuade*, *force*, *urge* etc. (Rudanko 1997: 259-60). There are a number of diagnostic tests that help to classify a verb as bivalent/monotransitive or as trivalent/object-control; these tests can be applied to *consider*-type verbs found in pattern (32b) in order to decide if they should be specified as '*expect*-type' or '*persuade*-type'.

Since an NP_2 *to be* XP-string is a single constituent in sentences with *expect*-type verbs, it can commute with a single NP (34a). In sentences with *persuade*-type verbs, where it consists of two constituents, it must commute with two phrases (34b) (cf. Denison 1993: 167; Quirk *et al.* 1972: 837). The results are not so clear-cut for *consider*, though. If we take the corresponding complex-transitive pattern to be a trivalent construction, *consider* behaves like an object-control verb (34c). A bivalent pattern is also possible (34c'), but this seems to represent a different, dynamic sememe of the verb.

(34) a. I expected [**the news**]./ [**What**] did you expect?
b. I persuaded [**John**] [**of my opinion**]./ [**What**] did you persuade [**John**] of?
c. I consider [**John**] [**a fool**]./ [**What**] do you consider [**John**]?
c'. !I'm considering [**the plan**]./ ![**What**] are you considering?

A related test substitutes finite clauses for the 'NP_2 + infinitive'-string. The bivalent *expect*-type verbs allow commutation with just a finite clause (35a), while *persuade*-type verbs require commutation with an NP plus a finite clause (35b) (cf. Denison 1993: 167; Huddleston and Pullum 2002: 1201; Quirk *et al.* 1972: 837). *Consider* cannot pattern with *persuade*-type verbs (35c)[29]; on the other hand, when it behaves like *expect* (35c'), the construction seems again to include a different sememe. The results of this test are consequently rather indeterminate.

(35) a. Mary expected [**that John would leave**].
b. Mary persuaded [**John**] [**that he should leave**].

[29] A finite clause with *whatever* is marginally acceptable: ??*I'll consider John whatever I like*.

c. *I consider [**John**] [**that he is a fool**].
c'. !If you consider [**that John has been in jail before**], I'm not surprised.

The reflexivisation evidence is more straightforward. If the subject of the infinitive is co-referential with the subject of the main verb, the sandwiched NP does not need to appear in sentences with *expect*-type verbs (36a) (cf. Huddleston and Pullum 2002: 1202; Traugott 1992: 245). Yet it must appear as a reflexive pronoun before the infinitive in sentences with *persuade*-type verbs because it functions as a direct object at the same time (36b). *Consider*-type verbs also require the postverbal NP to be reflexivised if it is co-referential with the subject of the finite verb (36c).

(36) a. Mary expects ∅ to pass the test.
b. Mary persuaded **herself** to study harder.
c. Mary considers **herself** a genius.

The passivisation test works on the assumption that when NP_2 can be separated from the infinitive in the passive, it may be identified as a separate direct-object constituent (Downing and Locke 2002: 96-7). This test yields rather inconclusive results because it does not neatly distinguish between *expect*-type verbs and *persuade*-type verbs in the first place. While the latter group can always passivise (37b), only some *expect*-type verbs can be used in the passive (37a), while others are only possible in the active (37a'). The postverbal noun phrase of *consider*-type verbs can also be moved to the subject position in the passive (37c), but since this is also possible with some *expect*-type verbs, the facts derived from this test must be regarded as ambiguous.

(37) a. **Mary** was expected to pass the test.
a'. ***Mary** was wanted to pass the test.
b. **Mary** was persuaded to study harder.
c. **Mary** was considered to be a genius.

Another means of testing whether the main verb selects the NP_2 is to examine if there is a semantic relation between them. There are two ways that can help shed light on this question: firstly, presumably non-referential elements such as *it* or *there* can be inserted into the postverbal position in order to see if the result is an acceptable sentence. Non-referential elements seem to be possible with *expect*-type verbs (38a), but they invariably render the sentence ill-formed with *persuade*-type verbs (38b), indicating that the latter impose selectional restrictions on their direct objects (Huddleston and Pullum 2002: 1202; Kilby 1984: 149). However, the evidence is somewhat unsatisfactory for *consider* (38c) because we get sentences whose acceptability ranges somewhere between (38a) and (38b):

(38) a. John expected **it** to rain.
b. *John persuaded **it** to rain.
c. ??I considered **it** rainy.

Secondly, when the infinitival clause is passivised, yielding a so-called 'second passive', the resulting sentence is claimed to be synonymous or at least "truth-conditionally equivalent"

(Aarts 1992: 110) with its active version only with *expect*-type verbs (39a), but not with *persuade*-type verbs (39b), which semantically select their objects (cf. Denison 1993: 167; Huddleston and Pullum 2002: 1202; Traugott 1992: 245). This test is difficult to apply to *consider*-type verbs, which are largely restricted to infinitives with *to be* (39c). In the rare cases where we find other infinitives, the corresponding second passive could be argued to be truth-conditionally equivalent to the active (39c').

(39) a. I expected John to kiss Mary. ≅ I expected Mary to be kissed by John.
b. I persuaded John to kiss Mary. ≠ I persuaded Mary to be kissed by John.
c. I consider the president to be a criminal. (no passive possible)
c'. ??I consider the president to undermine our democratic system. (ROS: 55) ≅ I consider our democratic system to be undermined by the president. (ROS: 25)

If we pause at this point to summarise the results of the various tests, we obtain a rather chequered picture:

Table 5: Summary of the object-control and monotransitive tests

	monotransitive (*expect*-type)	object-control (*persuade*-type)	*consider*-type
commutation with two phrases (cf. 34)	—	√	√
commutation with NP and finite clause (cf. 35)	—	√	—
obligatory reflexivisation of NP_2 (cf. 36)	—	√	√
passivisation of main verb possible (cf. 37)	—/√	√	√
nonreferential elements as NP_2 possible (cf. 38)	√	—	(√)
second passive semantically equivalent to active (cf. 39)	√	—	(√)

A clear either/or-verdict cannot be derived from these findings. The only test that provides unambiguous results is the reflexivisation evidence; all the other tests remain inconclusive because they either do not clearly distinguish between *expect*-type and *persuade*-type verbs (passivisation of the main verb), or the results we get for constructions with *consider* are semantically tricky or syntactically doubtful (cf. checks in parentheses). The commutation tests yields contradictory results because *consider* can have two postverbal phrases like *persuade*, but patterns with *expect* in that it does not allow a postverbal NP plus a *that*-clause. If we still want to model the infinitival construction after *consider*-type verbs on either a monotransitive or an object-control pattern, we need to proceed opportunistically. This is exactly what is done in most descriptive grammars.

Older grammars usually interpret *consider*-type verbs followed by an infinitival construction as monotransitive. Scheurweghs, for example, analyses "the whole group *noun + infinitive*" as "the real object of the main verb" (1959: 224). The same view is held by Ek and Robat (1984: 321) and by Quirk *et al.* in the 1972 edition of their grammar (834, 838). This analysis is primarily based on the intuitive semantic argument that *consider*-type verbs do not impose selectional restrictions on the postverbal NP_2. Evidence for this claim is sparse and should be viewed with caution, though, because non-referential phrases in the NP_2-position are somewhat doubtful and the passivisation of the infinitive is rarely possible with *consider*. Moreover, a monotransitive analysis has all the other tests against itself and is therefore rightly criticised by many grammarians (e.g. Emons 1978: 89; Mair 1990: 175).

Even so, the monotransitive analysis has shown considerable persistence because it presumably has a prominent model in Latin, namely the 'accusative and infinitive construction' (AcI) (Dirven and Radden 1977: 278; Onions 1904: 127-8; Staudinger 1996: 68). Modern grammars of Latin do not apply the term 'AcI' indiscriminately to all VOSI-structures but make a distinction similar to that found in English grammars: an AcI in the narrow sense is only assumed to exist in sentences where it is semantically impossible to regard the postverbal noun phrase as the object of the main verb and where this phrase can only be conceived of as the subject of the infinitival clause (Menge 2000: 677; Pinkster 1988: 188-9; Rubenbauer, Hofmann and Heine 1977: 192). This definition seems to apply to English *expect*-type verbs and possibly *consider*-type verbs as well; however, such an analogy would be subject to interlinguistic methodological opportunism because the criteria for Latin AcI-constructions are much stricter than those for the equivalent English patterns.[30] The differences between Latin and English become rather conspicuous when we take a look at the *verba dicendi*, for instance, where it is possible to insert an additional addressee in front of the AcI (40a) (Pinkster 1988: 188), which shows that the subject of the infinitive need not be identical with the object of the main verb as in English (40a'). Furthermore, Latin AcI-constructions after verbs meaning 'believe, consider' such as *credere*, *opinari* and *putare* can have future reference (cf. 40b) (Ard 1977: 44-5; Menge 2000: 681-2), indicating that the postverbal noun phrase is not a semantic argument of the main verb. Future reference is not possible after the English translation equivalents *believe* or *consider* (40b'), where the postverbal noun phrase must be construable as an entity that the referent of the subject has had experience with and consequently has

[30] The most obvious reason for this opportunism is the fact that the range of applicability of the AcI (as opposed to the much more restricted finite *ut*-clauses) is very wide in classical Latin, while the use of infinitival clauses as opposed to finite *that*-clauses is more constrained in modern English.

a permanently stored opinion about (more on the significance of the tense restrictions after these verbs in 11.4.3).[31]

(40) a. dico ei te venire. (from Pinkster 1988: 188)
a' *I tell him you to come.
b. opinatus sum me in provinciam exiturum. (Cicero, *Epistulae ad familiares* 7,17,2)
b'. *I believe myself to go into the provinces.

It would be difficult to account convincingly for these differences if there were really no semantic relationship between a main verb such as *consider* and the postverbal noun phrase in English, so that the Latin AcI cannot serve as a model for the English construction. Even Dirven and Radden, who analyse *consider* as a monotransitive verb, concede that "psychologisch das Subjekt des Komplementsatzes mehr als Komplement des Matrixsatzes empfunden wird" (1977: 278).

It is not surprising therefore that the alternative analysis of *consider*-type verbs as object-control has gained the upper hand in contemporary grammars. Interestingly, even Quirk *et al.* changed their analysis in the 1985 edition of their grammar, where the pattern in (32b) is classified as a variant of complex-transitive complementation (1195, 1202). *Consider* is taken to be a trivalent verb, whether its predicative complement is realised by a plain XP or by an infinitival clause. As with *persuade*-type verbs, the notional subject of the infinitive is thought to be controlled by the postverbal phrase NP_2 (Quirk *et al.* 1985: 1202). Yet this solution is no less opportunistic than the monotransitive analysis because the tests summarised in table 5 do not constitute conclusive proof that *consider*, like *persuade*, is a trivalent verb, with NP_2 forming an independent semantic and syntactic argument. Moreover, pattern (32b) with *consider*-type verbs is semantically quite remote from more central object-control constructions. Sentences including *persuade*-type verbs all conform to a semantic description in which "a certain participant (the referent of the object) is influenced by another participant (the referent of the subject) to perform an action (... denoted by the VP complement)" (Sag and Pollard 1991: 66). While typical object-control verbs such as *persuade*, *order*, *encourage*, *allow*, *force* etc. are dynamic verbs denoting a type of social interaction, verbs such as *consider* or *believe* express static, mental relationships that cannot be captured by Sag and Pollard's paraphrase. It would be difficult to construct a clear, cogent argument for treating constructions with *persuade*-type verbs and those with *consider*-type verbs together semantically.

[31] Latin grammars speculate that the AcI-construction started with verbs where the postverbal noun phrase can be regarded as an argument of the main verb, but, in contrast to Germanic languages, was generalised to an 'all-purpose' subordinating construction where NP_2 is semantically the subject of the subordinated infinitive construction only (Hofmann 1972: 353-4).

Some grammarians have tried to find a diplomatic compromise between monotransitive and object-control analyses by teasing apart the syntactic and the semantic evidence of the tests described above. They attach considerable importance to the fact that the semantic tests (inclusion of non-referential elements and second passive) point to a monotransitive analysis, while the syntactic tests (commutation with two phrases, reflexivisation of NP_2 and passivisation of the main verb) rather suggest an object-control analysis by conjecturing that structure (32b) is semantically bivalent, but syntactically trivalent. The model behind this proposal is the 'raising' analysis originally advanced in generative grammar (see 5.1): *believe* in (41a) is analysed as a bivalent verb semantically, which takes a subject argument and a direct object argument realised by an infinitival clause. Syntactically, however, the presumed semantic subject of the infinitival argument, NP_2, functions as the ('raised') direct object of the matrix verb (41b) (e.g. Biber *et al.* 1999: 696; Dik 1981: 34-5; Downing and Locke 2002: 96; Noonan 1985: 69).[32]

(41) a. semantic frame: [I] believe [Mary to be the best student].
b. syntactic frame: [I] believe [Mary] [to be the best student].

Typical *persuade*-type verbs require a direct object both semantically and syntactically; the NP_2 in constructions with *expect*-type verbs, on the other hand, seems to be neither semantically nor syntactically a direct object of the main verb, but only a subject of the infinitival argument. While syntax and semantics are thus homomorphic in monotransitive and object-control-structures, they are separate in the 'raising' analysis of (41). Apart from the fact that such an analysis requires the use of separate representational levels, neither the semantic nor the syntactic evidence of the tests summarised in table 5 supports the unambiguous semantic parsing of (41a) and the clear-cut syntactic analysis of (41b).

Verbs with infinitival complements have, in my opinion, been reduced to an excessively simple dialectic as bivalent/monotransitive or trivalent/object-control. Along the lines of the gradient distinction between transitive and copula constructions suggested in 4.1.1, it seems to be more realistic to arrange infinitival constructions on a continuum. At one end of the scale we find constructions in which the NP_2 is clearly a participant in the event denoted by the main verb (e.g. as the addressee in a speech-act event or as the influenced entity of a social interaction event), while towards the other end of the scale, the relationship between the event

[32] A similar analysis is submitted by Bresnan in the LFG framework. The postverbal NP is regarded as the subject of the infinitive in logical terms and as the object of the matrix verb in syntactic terms. To capture these bilateral associations, LFG uses the notation '(SUBJ, VCOMP); OBJ = VCOMP SUBJ' for verbs such as *believe*. The subject and infinitival complement roles are included in brackets to show that they are semantic arguments of the main verb, while the direct object, which is identified in the control equation with the subject of the infinitival complement, is placed outside of the brackets because it is not part of the thematic, but only of the syntactic (or functional) structure of *believe* (Bresnan 1982: 66, 2001: 272).

denoted by the verb and the postverbal noun phrase becomes more subtle and must be described in mental rather than physical terms. (42) contains an extract of such a continuum:

(42) a. I told John to come.
b. I persuaded John to come.
c. I expect John to come.
d. I want John to come.

We will postpone the question of where *consider*-type verbs fit into such a continuum and how the relationship between *consider* and NP_2 can be described semantically until a later point (see chapter 11).

For all grammarians who see the infinitival pattern (32b) as a variant of complex-transitive complementation (32a), the question remains of how these two formal alternatives can be modelled in the grammar. There are basically three approaches to this problem. One possibility is to argue that some verbs such as *consider* or *believe* allow *to be* to be inserted between the direct object and the predicative complement (e.g. Allerton 1982: 109; Curme 1931: 120-1; Radden 1989: 426; Smith 1977: 329). This insertion hypothesis might be substantiated from a historical point of view by arguing that an analytical language like English prefers to formally mark the predicative relationship between the two postverbal arguments: "Die Einfügung von to be ist in dem Charakteristikum begründet, daß die englische Sprache ... bestrebt ist, einem dem Sinn nach bestehenden prädikativen Verhältnis in der Form Ausdruck zu geben" (Behrens 1937: 100). The insertion argument loses some of its substance, though, when we consider that the infinitival variant is rather formal and has remained restricted to a few mental verbs. It would be impossible, for instance, to stress the predicative relationship between NP_2 and XP by inserting *to be* (or, for that matter, *to become*) in most other complex-transitive sentences: **She wiped the table to be/become clean*; **He drank the coffee to be hot*; **The parents named the child to be/become Peter*.

Alternatively, the claim is made that *to be* is optionally or obligatorily deleted with some matrix verbs (Dirven and Radden 1977: 278; Hornby 1954: 23; Ross 1981: 465). In generative parlance, Stockwell, Schachter and Partee submit that "[t]he predicates which allow or require this deletion must be marked with the exception feature [+TO-BE-DEL]" (1973: 578). Interestingly, a historical explanation is also given for this deletion mechanism: Einenkel assumes that predicative NP_2 XP-strings have been derived from infinitive clauses by deletion of the copula (1916: 25). The deletion analysis is not only implausible historically (cf. Ard 1977: 32-4; Visser 1963: 552-3), but also problematic as a description of the present-day state of play. (32b) is not simply "a truncated version of the parallel sentence containing *to be*" (Newman 1982: 154) because this does not explain the semantic differences between these two structures, which will be elucidated in chapter 11 (cf. Borkin 1973: 44; Newman 1982:

154). Furthermore, a deletion feature is purely stipulative and cannot account for the fact that *to be*-deletion should be optional with some verbs, and obligatory with most other complex-transitive verbs.

Finally, it is always possible to circumvent derivational accounts by claiming that the realisation possibilities of the complex-transitive complementation pattern are specified in the lexicon for each verb (e.g. Emons 1978: 111-2). This suggestion does not have any explanatory power, however, and only shifts the problem away from syntax and into the lexicon. If we really want to get to the heart of the problem, there is no other way but to focus on the semantic differences between constructions with and those without *to be*, as will be done in part II.

4.3 Treatment of the [NP$_1$ V NP$_2$ *as* XP]-pattern in descriptive grammars

The second pattern besides [NP$_1$ V NP$_2$ *to be* XP] that is found as a structural alternative to complex-transitive complementation is [NP$_1$ V NP$_2$ *as* XP]:

(43) a. John considers Mary a genius.
b. John considers Mary as a genius.

The predicative relationship between *Mary* and *as a genius* in (43b) is similar to that obtaining in (43a). Generally speaking, "the second phrase expresses a classifying or qualifying property attributed to the first ... NP" (Schneider 1997: 33; cf. also Emonds 1985: 264; Swan 1980: 72). *As* XPs share most of the predicative characteristics of plain XPs: they can be realised by *as* APs and *as* PPs beside *as* NPs (44a), cannot be preposed in the passive (44b) (Emonds 1985: 267), show number agreement with the NP$_2$ (44c), cannot serve as antecedents for personal pronouns or the interrogative pronoun *who* (44d and d')[33], may be referred to by *so/thus* (44e), and permit adverbs of degree (44f and f').

(44) a. [T]he resulting estimate of six million disabled people includes many who would not regard themselves as **disabled** or **in need of** special help from services or cash benefits (BNC B01: 1036).
b. ***As a genius** was considered Mary by John.
c. John considers **Mary and David** as **experts**.
d. *The teacher regards him as a rock, because **it** never stands up.
(from Emonds 1985: 271)
d'. ***Who** does John regard Mary as?
e. **Thus**, indeed, would many 'Christians' regard it today (BNC EDY: 1756).
f. "I regard you as **a bit of a weathervane**," he said (BNC G0B: 237).
f'. Like Ann, Maureen had often felt uneasy about Sarah's relationship with Terry and

[33] The antecedent criterion is, however, weaker with most *as* NPs than with plain predicative NPs because *as* NPs are semantically less adjective-like (for an explanation see 11.4.6.2). In the following example, *as* NP is referred to by the relative pronoun *who*:

A remarkable proportion regard the technical investigator as an unwelcome intruder **who** presumes to usurp the coroner's function (BNC CN2: 583).

thought that she seemed to regard him **more as a brother than a lover** (BNC G16: 2268).

[NP_2 *as* XP] occupies an intermediate position between the ordinary complex-transitive pattern and the infinitival structure: like the former, it does not include a verb, but like the latter, it contains an element that mediates between the two postverbal phrases. This characteristic has aptly been described by Curme: "*as* ... points as with an index finger to the following noun which expresses the idea in mind" (1931: 34).

There are basically two related questions raised by the [NP_1 V NP_2 *as* XP]-structure: the first concerns the word class of *as*, and the second the analysis of this structure in relation to the complex-transitive complementation pattern. Unfortunately, "qualifying *as*" (Schneider 1997: 33) has figured only at the periphery of the representation of complex-transitive complementation in grammars of English (Schneider 1997: 33-4). Answers to the two related questions asked above must therefore be gleaned from the casual remarks scattered in descriptive grammars.

We take up the issue of word class first. The two main functions of the word *as* besides its qualifying use — introducing comparative constructions (45a) and subordinate clauses (45b) — are usually classed as 'conjunctions' (Emonds 1985: 264-5; Swan 1980: 72).

(45) a. Now behind the little man stood a great grey dog, **as** tall **as** he was, with red eyes and hot breath (BNC APR: 1404).
b. **As** he neared the garage, one of the dogs grabbed his foot and dragged his leg under the door (BNC AJD: 235)

The word class of qualifying *as*, which makes up about a third of all occurrences of the form *as* in English texts (Schneider 1997: 42), has proved to be much more difficult to pin down. Several linguists, particularly in older grammars, avoid committing themselves to a clear position on this question, describing *as* in purely functional terms instead: House and Harman (1950: 254), Scheurweghs (1959: 30), and Zandvoort (1966: 203) simply state that the predicative complement may also be introduced by *as*. Kruisinga calls this introductory element "connecting *as*" (1932: 195), and Smith "Anknüpfungsglied" (1977: 328), while Pence and Emery treat it as an "expletive", i.e. as a sort of dummy element that is "grammatically ... superfluous" (1963: 149). Jespersen calls it a "particle", a decision which, as he explicitly remarks, allows him to avoid "having to discuss whether it is a conjunction or not" (1932: 374-5). Such vague descriptions may be tolerated since the notion of word class is certainly not central to an analytical language like English (Schneider 1997: 48), but if descriptive grammarians want to integrate [NP_1 V NP_2 *as* XP]-structures into their overall framework, some sort of informative label is required.

The word class most frequently assigned to qualifying *as* in contemporary grammars is 'preposition' (e.g. Francis, Hunston and Manning 1996: 158; Huddleston and Pullum 2002: 217; Quirk *et al.* 1985: 1200; Sinclair 1990: 183). The label 'conjunction', on the other hand, is found in only a few grammars (e.g. Poutsma 1928: 347), but is quite common in monolingual dictionaries (Schneider 1997: 34). Tagged electronic corpora such as the BNC do not treat the word class of *as* systematically either.[34] Most frequently, qualifying *as* is assigned the tag PRP (preposition), particularly when it is followed by an NP (46a); if *as* is followed by an adjective (46b) or a verbal *–ing*-form (46b'), on the other hand, the most likely tag is CJS (subordinating conjunction). In quite a number of comparable cases, however, *as* is simply assigned the label CJS-PRP, a 'portmanteau code' that turns up in cases "where the CLAWS system has indicated an uncertainty between two possible analyses" (Aston and Burnard 1998: 233) (46c). In addition, one sometimes comes across other, more unusual labels such as AV0 (adverb) (46d).

(46) a. He decided not to appeal in order to highlight what he regards [w **PRP**]**as the absurdity of the law** (BNC A28: 159).
b. The plaintiff will be at risk as to costs, if the court regards the actuarial evidence [w **CJS**]**as unnecessary** (BNC J6V: 209).
b'. It is not suggested however that directors' duties ... are shaped by a theory that regards the purpose of the company and company law [w **CJS**]**as being to further the public interest** (BNC FP2: 802).
c. Miss Araminta regards me [w **CJS-PRP**]**as a servant** (BNC HGV: 1676).
d. Teachers make use of a discourse which regards male aggression [w **AV0**]**as normal**: 'Boys will be boys' (BNC FA6: 306).

These seemingly random categorisations can be accounted for by the way the automatic part-of-speech-tagger CLAWS works. This probabilistic device assigns tags to words on the basis of the context they appear in (for details see Oakes 1998: 80-4). Since qualifying *as* (as opposed to comparative and subordinating *as*) can be followed by all kinds of word classes, it cannot be unambiguously tagged by CLAWS.

A well-substantiated decision either in favour of preposition or conjunction requires the careful examination of more finely-grained data, something that is neither done by CLAWS nor by most descriptive grammars. We can begin by looking at the kinds of phrases that *as* NP can be coordinated with. Emonds argues that since *as*-phrases can be coordinated with PPs, they must be treated as PPs as well (47a) (1985: 274-5). Unfortunately, though, the coordination data does not allow for such a straightforward conclusion. *As*-phrases can also be coordinated with adverbs (47b), and we certainly do not want to conclude from this that they constitute adverbs themselves. Rather, *as*-phrases after mental verbs such as *regard* can commute

[34] The same indeterminacy can be observed in the tagged versions of the LOB and Brown corpora (cf. Schneider 1997: 42).

with or be coordinated with adverbials, however they may be realised formally. The coordination data does not reveal anything about the category of *as*-phrases, but only shows that they are semantically compatible with adverbials, a fact that will be accounted for in section 11.2.4.

(47) a. This highly illuminating way of regarding beliefs and concepts not **in terms of their ultimate truth or falsity**, but **as the product of specific social conditions**, is best illustrated in Durkheim's book (BNC CS0: 472).
b. [A] consequence of being officially labelled 'deviant' is that other people come to regard the labelled person **differently**, **as a different kind of person** (BNC CRX: 713).

Qualifying *as*-phrases can even commute with a comparative clause introduced by the conjunction *as* (48a), which again does not allow us to conclude that *as* is a conjunction in all cases, but only that there must be some functional similarity between these two uses of the word. (48b) contains an example of the peculiar, but not too infrequent case in which a qualifying *as*-phrase and a comparative *as*-phrase are coordinated, with the two functions of *as* being merged into a single form, probably to avoid the clumsy juxtaposition of two *as*'s.

(48) a. I gather that there is a very strong bond among these people between brothers-in-law and that they regard them **as we do blood brothers** (BNC H9G: 124).
b. [S]he had to translate fifty pages a week, a drudgery she tried to regard **as ineluctable as brushing her teeth or washing the kitchen floor** (BNC CMJ: 119).

Another argument Emonds adduces for the prepositional status of *as* is his claim that the word can be followed by a gerund, which, as a nominal category, can follow a preposition, but not a conjunction (1984: 138-9, 1985: 274). Yet the identification of the *–ing*-form as a gerund is a point of contention. Hantson claims that this non-finite verb is not a gerund, but a present participle, which is preceded by the conjunction *as* (1989: 216; for a similar view, see Scheurweghs 1959: 170-1). It is very difficult to test these conflicting hypotheses. Hantson argues his case by showing that gerunds can have an overt subject (49a), whereas present participles cannot (49b), and that the non-finite form following *as* behaves like a present participle in that it does not allow an overt subject (49c) (1989: 216-7). Emonds, in his turn, constructs a (rather doubtful) sentence in which the *–ing*-form after *as* does have its own subject (49d), and I also found a single such case in the corpus (49d'). The nature of the *–ing* form after qualifying *as* is thus still in litigation.

(49) a. On **John** coming in she stopped reading.
b. *When **John** coming in she stopped reading.
c. *He rejects communism as **its usual realisation** leading to totalitarianism. (from Hantson 1989: 217; my emphasis)
d. ??I would describe what happened as **you(r)** not being considerate of me. (ROS: 58) (from Emonds 1985: 274; my emphasis)
d'. ?The later, more sophisticated theories tended to view the question of salvation not so much as **God** winning back the world from the Evil One ... but in terms of a legal arrangement entered into by God and man (BNC CCE: 321). (ROS: 45)

The data in (50), on the other hand, seem to accord well with Emond's prepositional analysis. While it would fit into the picture of a conjunction that *as* does not pied-pipe (50a, a'), it is highly unusual for a conjunction to allow stranding, which Emonds (1984: 141; 1985: 278) claims is possible with *as* (cf. 50b, b', b''). It is not clear how much of substance we can deduce from these sentences, though. Naturally occurring cases where *as* is stranded in questions are extremely rare. I did not find examples including verbs such as *regard*, but only a few instances in which *as* is stranded in copula-like constructions (e.g. 50c). Similarly, cases such as (50c'), where *as* is stranded in a relative clause, are few and far between. In the majority of instances, *how* is used in (indirect) questions (50d), and some piped preposition other than *as* in relative clauses (50d'). The last two sentences are not directly relevant to our discussion because they cannot be related to qualifying *as*-constructions but rather to the functionally equivalent adverbial structures described above.

(50) a. ***As what** does John regard Mr. Smith?
a'. ***Mr. Smith is not the good teacher **as whom** John regards him.
b. ??What does John regard Mr. Smith **as**? (ROS: 60)
b'. ?Mr. Smith is not the good teacher John regards him **as**. (ROS: 42)
b''. ?What we view the world **as** is dependent on our society. (ROS: 31)
c. What were Brownies first known **as**? (BNC G23: 938)
c'. Chris believes in teaching children about snakes, showing them that they aren't the horrible slimy things they're sometimes portrayed **as** (BNC K1E: 3554).
d. **How** you view public transport depends very much on where you live (BNC AB6: 1084).
d'. This exercise shows that the way **in which** we view the world is completely a question of how we see things and where we're coming from (BNC CEF: 384).

The following piece of evidence seems to tip the scales away from a prepositional analysis again. Qualifying *as* is not only followed by NPs, but very frequently by APs as well (51a). Yet a preposition cannot govern an AP (Hantson 1989: 217; Ogawa 1994: 443-4; Schneider 1997: 34) — not even in an "exceptional" (Long and Long 1971: 34; Quirk *et al*. 1985: 1201) or "highly uncharacteristic" (Ek and Robat 1984: 320) construction. What is even more, *as* is also occasionally followed by a PP (51b), and it is beyond doubt that a preposition does not take a PP as complement (Schneider 1997: 34).[35]

(51) a. The figure of profit Mr Damant regards as **most useful** is that of maintainable earnings (BNC CBX: 757).
b. To exercise his right to treat the contract as repudiated ..., the buyer must inform the seller that he regards the contract as **at an end** (BNC H7U: 1041).

Two ways out of this predicament are suggested by grammarians trying to defend their prepositional analyses. Inoue (1984) points to the fact that qualifying *as* clearly prefers NPs over APs and particularly over PPs quantitatively. Table 6 presents my BNC corpus results for the three

[35] There are some exceptions such as *Bill came from near Boston* (Rauh 1995: 19), but I feel that they require a different analysis.

verbs *view*, *think of* and *regard*: *as* is followed by NPs in more than two thirds of all sentences with these verbs in the [NP_1 V NP_2 *as* XP]-construction; APs make up only about a fourth of all instances, and the quantity of PPs is clearly negligible.

Table 6: Proportion of NPs, APs, and PPs after qualifying *as*

	NP	AP	PP	*n*
view	917 **79.2%**	223 **19.3%**	18 **1.6%**	1,158
think of	62 **68.9%**	25 **27.8%**	3 **3.3%**	90
regard	2,617 **70.3%**	1,031 **27.7%**	74 **2%**	3,722

These results are striking, and we will have to concern ourselves seriously with them later (see chapter 11.4.6.2). However, they do not lend themselves very easily to an argument for *as* as a preposition because other prepositions such as *in* and *with* govern NPs exclusively and do not show such a preferential hierarchy. In a discrete grammatical framework, the results of table 6 are puzzling and difficult to account for.

Other grammarians try to come to terms with the variety of phrases followed by the putative preposition *as* by analysing the complement of *as* as a non-finite clause underlyingly: *as being silly/in high spirits* (Ek and Robat 1984: 320; Quirk *et al.* 1985: 1201). The respective cases without a copula would then probably be derived by deleting *being*. This "quasi-solution" (Schneider 1997: 34) strikes one as counter-intuitive, though, and was already criticised by Jespersen (1932: 375). *As* is followed by the non-finite copula in only a minority of sentences (according to a BNC-search, in 164 out of 3,661 sentences with *regard* in the relevant construction, which makes up just 4.5%). It therefore seems more reasonable to argue that *being* is inserted as a stylistic device between *as* and XP under certain conditions. One factor conditioning the occurrence of *being* is the categorial realisation of XP: *being* is found disproportionately more often before APs (52a) and particularly before PPs (52b) than before NPs (52c), as Table 7[36] illustrates. A reason behind this distributional pattern seems to be that NPs are clearly preferred after *as*, so *being* is primarily inserted if the XP-slot is realised by the less frequent and probably less natural adjectival and prepositional phrases.

[36] In this and the contingency tables to follow, the first line of each cell contains the observed frequency, which is followed in brackets by the expected frequency. The third line gives the empirical χ^2-value for the individual cell. Cells that show a significant difference between observed and expected frequencies are brought out by shading; if the observed frequency is significantly lower than expected, the cell is lightly shaded, and if it is significantly higher than expected, it is darkly shaded. The χ^2-value and the φ-value for the whole table are given below the table.

(52) a. Maybe they do think of themselves as **being professional** in the same, or similar, sense to that which is commonly understood (BNC FPJ: 1622).
b. The Soviet forces regard this as **being of the highest importance** and will probably regard the save delivery of the offrs [sic!] as a test of British good faith (BNC FE5: 926).
c. They regard the problems as **being a result** of the structure of the common agricultural policy (BNC HHV: 10627).[37]

Table 7: Comparison of *as* XP and *as being* XP across categories

	NP	**AP**	**PP**	***n***
***as* XP**	3,681 (3,577.6) χ^2=**3**	1,185 (1,254.5) χ^2=**3.9**	58 (91.9) χ^2=**12.5**	4,924
***as being* XP**	55 (158.4) χ^2=**67.5**	125 (55.5) χ^2=**87**	38 (4.1) χ^2=**280.3**	218
n	3,736	1,310	96	5,142

χ^2=454.2; df=2; highly significant at p<0.001; φ=0.3

The existence of the *as being* XP-pattern can thus not be used to mount a case for *as* as a preposition because the presumably more basic pattern is much rarer than the typical structure without *being*. As table 7 has shown, the occurrence of *being* seems to be just a device to naturalise APs and particularly PPs in the XP-position.

An additional argument against the prepositional status of *as* is the fact that *as* does not govern the case of a following NP. Examples from English are extremely rare (cf. 53a; here, *us* could easily be substituted for *we*), but equivalent structures in German demonstrate that the case of the NP is not determined by the word *als*, but is dependent on the case of the direct object (53b, b' and b").

(53) a. I stammered something about not understanding cricket, totally incredulous that anyone should suppose I did understand it, or that I should regard the English side as '**we**' (BNC ADM: 15).
b. John betrachtet seinen Englischlehrer (acc.) als **einen guten Pädagogen** (acc.).
b'. John glaubt seinem Englischlehrer (dat.) als **einem guten Pädagogen** (dat.).
b". John gedenkt seines Englischlehrers (gen.) als **eines guten Pädagogen** (gen.).

Table 8 gives a synopsis of the tests used for classifying *as* as a preposition or a conjunction. The coordination data are inconclusive because qualifying *as*-phrases can be followed by functionally equivalent adverbial phrases of any category; similarly, the status of the *–ing*-

[37] While the proportion of *being* before APs is 6.6% and before PPs even 39.6%, it is a mere 1.5% before NPs. A considerable number of these exceptional cases seems to be due to additional factors; in two-thirds of the sentences with *being* before NPs, there is an adverbial or adjectival premodifier before the noun, which seems to favour the use of *being*. This preference could also be brought out in an evaluation test: of 45 informants, 34 chose (a) with *being* in front of the premodified NP, and only 11 opted for (b) without *being*.

(a) The US regard Britain as being in general a trustworthy ally (34).
(b) The US regard Britain as in general a trustworthy ally (11).

form after *as* remains indeterminate between a gerund and a present participle. The fact that stranding is possible with *as* points in the direction of preposition, yet pertinent examples are rare and sometimes doubtful. On the other hand, the fact that *as* can be followed by APs and PPs appears to favour an analysis as conjunction, but then we do not have an explanation for the preferential hierarchy of table 6 yet. Finally, *as* behaves like a conjunction because it is transparent for case marking, but this can hardly be tested in English, and evidence from other languages must be used with caution.

Table 8: Summary of preposition/conjunction tests for qualifying *as*

	preposition	**conjunction**
coordination data	**??**	
-ing form after *as*	**??**	
preposition stranding	(√)	
category of XPs		(√)
case of XP after *as*		(√)

The squish-like syntactic nature of qualifying *as* does not allow us to unequivocally assign the label 'preposition' or 'conjunction' to it. Discrete word classes are not able to capture the many peculiar characteristics of *as*, which straddles the distinction between preposition and conjunction.[38] Most descriptive grammars do not carefully weigh the pros and cons of a prepositional analysis of qualifying *as*, but opportunistically treat it as a preposition. This allows them to integrate the [NP_1 V NP_2 *as* XP]-structure more conveniently into their overall framework. If qualifying *as* is regarded as a preposition, *as* XP can then be analysed as a prepositional predicative complement as compared to a plain XP complement, in the same way that a prepositional object is distinguished from a plain NP object (Downing and Locke 2002: 54; Huddleston and Pullum 2002: 54, 216-7; Quirk *et al.* 1985: 1200). The alleged systematicity is reinforced by the claim that the preposition *as* has "copulative force" (Long 1961: 279; cf. also Long and Long 1971: 34; Quirk *et al.* 1985: 1200) and thus constitutes a "copular prepo-

[38] There are, however, predicative complements in English which are introduced by more central prepositions such as *for* and *into*.

(a) Mary takes John **for** a fool.
(b) Mary changed the frog **into** a handsome prince.

Unlike *as*, they do not allow APs and PPs as complements, govern case in German and freely allow stranding. While *for* is quite exceptional in this function in English, German *für* is found much more often and can even be followed by an AP and a PP: *Ich halte John für dumm/unter meiner Würde* — an indication that it is developing into a less canonical preposition in German.

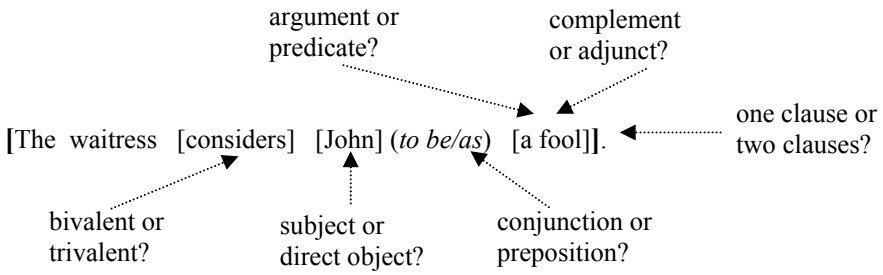
sition", whereas most other prepositions are "transitive prepositions" (Emonds 1984: 144; 1985: 264):

(54) a. The police accused Bob **of** [transitive preposition] **the murder** [prepositional object].
b. The police regard Bob **as** [copular preposition] **the murderer** [prepositional predicative complement].

This proposal does not carry great conviction because it opportunistically squeezes the [NP_1 V NP_2 *as* XP]-structure into a discrete grammatical framework. Apart from the numerous distributional mismatches that have to be ignored, the analysis in (54b) has nothing to say about the semantic differences between plain and 'prepositional' predicative complements, nor does it explain why some verbs must have a 'prepositional' predicative complement obligatorily (e.g. *regard*), while others select it only optionally (e.g. *consider*), and still others do not tolerate it at all (e.g. *believe*). Downing and Locke state that "[s]ome verbs require this; with others it is optional" — this is all they and other descriptive grammarians have to say on that score (cf. also Allerton 1982: 110).

If we take a step back at this point and review the treatment of secondary-predicate constructions in descriptive grammars, we realise that the complex-transitive analysis is accorded a theoretical status quite unjustified by the linguistic facts. Even setting aside semantics, which is all but ignored in descriptive grammars, the syntactic analyses are based on spurious analogies and face numerous unresolvable decisions between discrete syntactic functions. (55) gives an overview of the problems inherent in the descriptive analyses of the [NP_1 V NP_2 (*to be/as*) XP]-pattern.

(55)



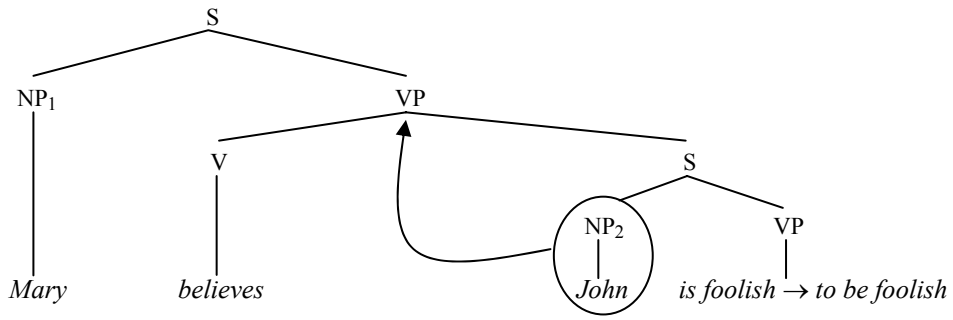
In view of these difficulties, it is not surprising that generative grammarians such as Aarts suggest that "we do away with the superfluous functions of subject predicative and object predicative, and admit small clauses into our grammatical terminology" (1997: 339). The Pandora's box of small clauses will be opened in the next chapter.

5. Challenging small-clause analyses of secondary-predicate constructions

5.1 From Subject-to-Object Raising to Small-Clause Theory

Generative syntax by and large neglected the [NP$_1$ V NP$_2$ XP]-pattern up to the 1980s (Aarts 1992: 9). The focus of the (Extended) Standard Theory was rather on the question of how the infinitival complement in *Mary believes* ***John to be foolish*** is related to the finite variant in *Mary believes* ***that John is foolish*** (Postal 1974: 4). Picking up an analysis originally suggested by Rosenbaum (1967), Postal and his followers advanced the proposition that such finite and infinitival clauses are identical underlyingly, but that, in the non-finite pattern, the deep-structure subject has been raised to the matrix object position at surface structure, with a concomitant change of the verb form from finite to infinitival (56) (Perlmutter and Soames 1979: 79, 81-3; Postal 1974: 40-1).

(56)



This 'Subject-to-Object Raising' analysis tries to capture the characteristic facts also noticed in descriptive grammars (cf. 4.2) that the NP$_2$ seems to function as the semantic subject of the infinitive but has the grammatical qualities of a direct object. The derivation sketched in (56), which was assumed to be triggered by verbs such as *believe* and *consider* (Postal 1974: 297-8), was regularly contrasted with the so-called 'Equi-NP-Deletion'-analysis suggested for verbs such as *persuade* and *urge*, which were taken to bear both a syntactic and a logical relation to their objects. In a sentence such as *Mary forced John to leave*, a second occurrence of the NP *John* was posited in the subject position of the infinitival clause, which was thought to have been deleted at surface structure because it is identical with the object of the main verb *forced* (Borkin 1984: 4).

The Raising-analysis of (56) was extended from infinitival clauses to [NP$_2$ *as* XP]-complements as well: [NP$_2$ *as* XP] was argued to form a clause at deep structure but to have been broken up at surface structure, where NP$_2$ functions as the derived object of the matrix verb in the same way as in the infinitival pattern (Postal 1974: 240-1). Like some descriptive

grammarians (cf. 4.3), Postal analysed *as* in *She regards **him as a fool*** as governing a verbal *–ing*-complement (*as being a fool*) underlyingly, with the copula having been deleted in the derived structure (1974: 240; cf. also Borkin 1984: 5-6; Hantson 1989: 212-3). The suggestion that a clause underlies the NP_2 XP-pattern as well (cf. Menzel 1973: 16-7; Stockwell, Schachter and Partee 1973: 578) did not figure prominently in the Raising debate, though.

It was not before the framework of GB-theory was established (Chomsky 1981) that the [NP_1 V NP_2 XP]-structure captured the attention of generative linguists (Aarts 1992: 12) within the new concept of 'Small-Clause theory'. This concept posed a challenge to the Raising analysis because it tried to accommodate the phenomenon in a different way. NP_2 (*to be/ as*) XP-strings were now analysed as clauses at all levels of derivation, including surface structure. The deconstruction of the traditional Raising analysis had already begun ten years earlier, however, when Chomsky claimed that finite and infinitival structures form clausal constituents both underlyingly and in the derived structure, i.e. that NP_2 in the infinitival variant has not been moved to the object position of the superordinate clause (1972: 6-7). Chomsky's original criticisms of Subject-to-Object Raising were not always well-grounded and are largely obsolete today, but the spirit of his suggestion has nevertheless caught on. Small-Clause-theoreticians have pressed the matter even further, arguing that not only finite *that*-clauses and infinitival clauses, but verbless NP_2 XP-strings as well should be treated as clauses at all levels of derivation, and that the three complement structures differ only in their internal form (finite verb, non-finite verb, no verb). The verbless 'NP_2 XP'-string, or 'small clause' (SC), has assumed a determining role in GB-theory because the subject/predicate relationship instantiated by the NP_2 XP-string is thought to be a reflection of its clausal status even in the absence of an ordinary verb phrase (Aarts 1992: 21; Basilico 2003: 1; Stowell 1995: 272).[39] The square brackets around *Mary intelligent* in (57a) indicate that an SC is analysed as one clausal constituent occupying the direct-object position in the matrix sentence on a par with finite and non-finite clauses (57b, c).

(57) a. John considers [$_{SC}$ Mary intelligent].
b. John believes [that Mary is intelligent].
c. John believes [Mary to be intelligent].

What appears to be a completely unprecedented and unorthodox proposal had one notable predecessor in the first half of the 20th century: the Dane Otto Jespersen. Jespersen draws a

[39] The term 'SC' is also frequently applied to structures where XP is an uninflected verb such as a bare infinitive, an *–ing*-form or a past participle (e.g. *Mary made **John leave the house***; *The waitress saw **him drinking his coffee***; *Mary got **Fred invited to her party***) (e.g. Haegeman and Guéron 1999: 111-2). Since these verbal SCs differ crucially from non-verbal SCs both syntactically and semantically (Aarts 1992: 189; Basilico 2003: 2-3), they do not fall within the purview of this dissertation.

distinction between what he calls a 'junction' and a 'nexus'; the former structure expresses a single idea through the combination of a core semantic element and an adjunct enriching its description (e.g. *a beautiful rose*), while the latter construction contains two ideas that stand in a subject/predicate relationship with each other (e.g. *the rose is beautiful*): "A junction is like a picture, a nexus like a process or a drama" (Jespersen 1924: 116). Jespersen then goes on to distinguish between nexus structures which occur independently — essentially simple sentences — and those which cannot occur on their own (1940: 6). Such 'dependent nexus structures' include finite subordinate clauses (e.g. *I think* ***that the rose is beautiful***), non-finite structures (e.g. *I like* ***roses to be beautiful***), and, Jespersen claims, predicative NP_2 XP-strings (e.g. *John considers* ***the rose beautiful***) (1924: 117-23, 1940: 7-8). Jespersen provides the following abstract functional representations of nexus-objects, where 'S_2' stands for the second subject in the sentence and 'P' for the predicate of the dependent nexus structure. Like modern descriptive grammars, Jespersen differentiates between current objects (58a) and resultant objects, which he represents as 'O^r' (58b) (1924: 122, 1940: 8). (58c) and (58d) are the descriptions of the functionally equivalent infinitival and finite clauses, respectively, and (58e) the corresponding structure with the 'particle' (p) *as* before the secondary predicate (1932: 375, 1940: 12). The four structures (S_2 P), (S_2 I P), (S_2 V_2 P) and (S_2 p P) are consequently treated by Jespersen as functionally equivalent expressions that only differ in the formal realisation of the dependent subject/predicate relationship (1924: 117-23).

(58) a. They considered Tom a happy man: S V O(S_2 P)
b. They elected Tom President: S V O^r(S_2 P)
c. I considered Tom to be a happy man: S V O(S_2 I P)
d. I believed that Tom was a happy man: S V O(S_2 V_2 P)
e. He regarded Tom as a happy man: S V O(S_2 p P)

The idea that the direct objects in (58a, b) and (58e) are realised by subordinate verbless clauses, which establish a predicative link of their own, was and still is anything but conventional. Yet Jespersen went one step further still in bucking traditional analyses: he argues that if in a sentence such as *They made him President* the postverbal elements form a nexus-object, then the corresponding passive sentence *He was made President* must contain a discontinuous nexus-subject, namely "*He...President*" (1924: 123, 1933: 312).[40] SC-theory has adopted Jespersen's verbless dependent nexus structures in essence if not detail. While the

[40] Not everyone of Jespersen's followers was prepared to go all the way with him. The German linguist Hammerich, who on the whole espoused Jespersen's account of dependent nexus structures, was a bit more cautious about the analysis of passive sentences. While he admits that in a sentence like "*der Sohn wurde Johannes getauft*" the logical subject should be the nexus "*der Sohn Johannes*", he feels urged to concede: "Aber das Sprachbewusstsein fasst den Zusammenhang sicher anders auf, nämlich als *der Sohn* (S) *wurde Johannes getauft* (P)" (1930: 307).

treatment of active sentences is almost identical, the modern distinction between deep and surface structure made it possible to replace Jespersen's clumsy notion of discontinuous nexus subjects in passive sentences with the more elegant analysis of (59). The NP *He* has been raised from the subject position in the SC to be the subject of the main clause, leaving behind a trace *t*. The moved constituent *He* and the trace are co-indexed (cf. Aarts 1992: 21).

(59) He_i was made [$_{SC}$ t_i president].

Jespersen's suggestion to analyse NP_2 XP-strings as clauses both semantically and syntactically had lain dormant for almost 50 years, when SC-theory arrived at similar conclusions within a completely different syntactic framework. Stowell (1981, 1983) was the first to revisit the possibility that NP_2 XP-strings constitute verbless clauses at all syntactic levels, and has thereby touched off one of the liveliest discussions in generative grammar to date. The GB-framework offered a fresh conceptual basis for this proposal because many of its principles barred the descriptive complex-transitive analysis or a hybrid analysis such as the Raising proposal, where a clausal constituent is assumed to be present at D-structure and two separate constituents are postulated for S-structure. To keep our discussion within bounds, I will outline the basic ideas behind these GB-principles only.

The lexical entry of a verb is generally thought to spell out the number and nature of the arguments selected by that verb (Grewendorf 2002: 18-9; Haegeman and Guéron 1999: 25). According to the Theta-Criterion, one of the central principles of GB-theory, each thematic or theta role (θ-role) associated with a verb must be realised by one and only one argument in the syntax, and each argument may be assigned one and only one θ-role (Aarts 1992: 19; Haegeman and Guéron 1999: 28). This "biunique relation between arguments and θ-roles" (Haegeman and Guéron 1999: 30) prohibits the complex-transitive analysis, in which NP_2 is both the direct object of the main verb and the subject of the predicative complement because it would be assigned two θ-roles. The Raising analysis would not violate this principle because NP_2 is thought by Postal and his followers to be assigned a thematic role only by the subordinate predicate (XP) and not to bear a thematic relation with the matrix verb.

As a result of the Theta-Criterion, it must be argued by proponents of GB-theory that a matrix verb such as *consider* does not select a direct-object NP, but assigns a propositional θ-role to the whole string [*John foolish*] (Chomsky 1986a: 90-1; Kaplan 1988: 78). This semantic claim follows mainly from the uniqueness requirement of the Theta-Criterion, whereas the following independent semantic arguments given in the literature are rather feeble:

(i) Rafel surmises that the postverbal string must form a semantic clause because the subject/predicate relationship between NP_2 and XP "can be independently established within a

copular sentence" (2002: 475). As has already been noted in 4.1.3, the copula sentence *John is a fool* is not necessarily entailed by *Mary considers John a fool*, so there is no sound semantic basis for arguing that it must be assumed to underlie the latter structure.

(ii) Proponents of SC-theory frequently mention the semantic affinity between the NP_2 XP-string and infinitival or finite subordinate clauses and claim that these are alternative formal realisations of the same semantic unit (e.g. Aarts 1992: 70; Rothstein 1995: 32; Staudinger 1996: 28). Since *consider* selects a subordinate clause in *Mary considers that John is a fool* and in *Mary considers John to be a fool*, the "truth-conditionally equivalent" (Rothstein 1995: 32) or "interpretive similar[.]" (Haegeman and Guéron 1999: 110) structure *Mary considers John a fool* is argued to contain a (verbless) subordinate clause as well (Chomsky 1981: 106; Haegeman and Guéron 1999: 109; Rothstein 1995: 29). Hoekstra goes on to claim that "[t]he minimal hypothesis would be that the same thematic roles are assigned ..., the single difference being that the internal role is now borne by a small clause instead of a full clause" in the NP_2 XP-pattern (1992: 147; similarly, Staudinger 1996: 123).[41] Two objections must be raised against this 'minimal hypothesis', though. First of all, the three structures claimed to be paraphrases of one another are not synonymous, and one cannot felicitously be exchanged for the other in most cases. If *I consider John a fool* and *I find John a fool* are simply paraphrased by *I consider that John is a fool* and *I find that John is a fool*, important meaning distinctions have to a considerable degree fallen by the wayside (see chapter 11). Moreover, infinitival or finite variants are not available for resultative and depictive (and even some qualifying) structures at all (cf. *She shot John dead*; *She served the coffee hot*; *They regard him as a genius*). My second objection is related to the first one and concerns the argument that NP_2 and XP must form a clause because there is a clause in the similar finite and infinitival structures as well. This sort of reasoning is dubious and has already been criticised by Marty as "Fehler der Substitution eines verwandten Satzes an Stelle der unbefangenen Interpretation des gegebenen" (in Eisenmeier, Kastil and Kraus 1918: 290). From a Construction-grammar perspective, syntactically distinct constructions cannot simply be claimed to be se-

[41] Chomsky (1981: 38) and other generative grammarians argue that the material contained in lexical entries can be restricted to semantic information, so that the categorial realisation of an argument ideally follows from its semantics alone. Verbs that take a propositional argument will have this argument realised as a clause, i.e. as a structurally defined subject/predicate relationship (Rothstein 1992: 119-21). When different formal realisations of an argument are possible, as is the case with the finite, infinitival and small-clause variants of the propositional argument, only the so-called 'Canonical Structural Realisation' (CSR) automatically follows from the meaning of the argument, while alternative syntactic realisations must be specified in the lexical entry of a verb as marked options (Chomsky 1986a: 87-90; Kaplan 1988: 86; Levin and Rappaport-Hovav 1992: 249-50). Since the CSR of the 'propositional argument' is usually taken to be a full clause, infinitival clauses and particularly SCs must be explicitly stated in the lexical entries of the respective verbs as marked encodings of the propositional θ-role (Aarts 1992: 70; Kaplan 1988: 79, 85-6).

mantically identical; to speak with Marty: "Derselbe Tatbestand kann Anlaß zu einer Mehrheit inhaltlich verwandter Urteile ... geben, und auch wenn mit dem Gegebensein des einen ein anderes ... nahe liegt, so ist damit gar nicht gesagt, daß sie identisch seien" (in Eisenmeier, Kastil and Kraus 1918: 292).

(iii) If *consider* selects a propositional argument, it cannot assign a θ-role to the NP_2, so this noun phrase must be shown to be not a semantic argument of the main verb. To prove this contention, it is claimed that in a sentence such as *Mary considers John a fool*, Mary does not consider 'John' but the proposition 'that John is a fool' (cf. Aarts 1992: 22; Chomsky 1986a: 91). Likewise, since a sentence such as *I consider the problem difficult* does not entail *I consider the problem*, the noun phrase *the problem* is thought to be an argument of the main verb in the latter, but not the former structure (Rafel 2001: 476; Rothstein 1995: 31, 2000: 243). Yet the entailment relation between the two sentences with *consider* is only permissible if we suppose that we are dealing with the same meaning of the verb. However, it seems more reasonable to argue that *consider* in *He's considering the problem* is a dynamic verb denoting a thinking process, while in *He considers the problem difficult* it has a static meaning, expressing a subjectively stored opinion (Schneider 1988b: 59-70, 346-50). As a corollary of this, it can be argued that the dynamic sememe is bivalent, whereas the static one is trivalent, so that an entailment relation cannot be felicitously construed. In a Construction-grammar framework, *consider* would be argued to fill the roles in two semantically different syntactic constructions, and it is not legitimate to explain its behaviour in one construction with that in the other.

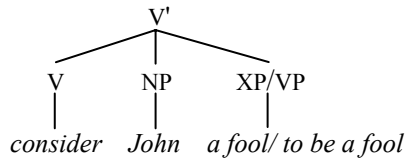
Although the claim that verbs such as *consider* select a propositional argument is nowhere meticulously argued for and is not based on reliable semantic tests, the bivalent nature of such verbs is generally thought to be sufficiently established by the provisions of the Theta-Criterion.

Once the lexical requirements of a verb are determined, it must be examined how they are projected into syntax. The D-structure format of representation constitutes an interface between the lexicon and syntax because the syntactic configurations at that level directly mirror the thematic relations between a verb and its arguments (Grewendorf 2002: 15). The D-structure representation would parse our example sentence as [*Mary*] *considers* [*John a fool*]. In earlier versions of generative grammar, the derivational component could raise the NP *John* to the direct-object position of the main verb, so that *consider* would have two postverbal complements at surface structure: [*Mary*] *considers* [$John_i$] [t_i *a fool*]. Yet the introduction of the Projection Principle in Chomsky 1981 (32-3) required a tight correspondence between the

argument structure as determined by the Theta-Criterion and syntactic representation: information given in the argument structure of a verb must be represented categorically at each syntactic level, i.e. not only at D-structure, but at S-structure (and LF) as well (Grewendorf 2002: 20; Kaplan 1988: 78). This means that if a verb selects a propositional argument, the verb must have a propositional argument at all levels of grammar; similarly, if the verb does not subcategorise for a direct-object argument, it cannot have a direct-object argument at any level, *contra* the Raising account (Aarts 1992: 23; Cook and Newson 1996: 166; Hoekstra 1988: 106). The SC-analysis is in keeping with the strict requirements of the Projection Principle because a verb such as *consider* assigns a θ-role to a proposition and this proposition remains intact as a syntactic constituent at S-structure. NP_2 is not moved to a direct-object position, which is not subcategorised for by the verb and cannot be created at S-structure only. [*Mary*] *considers* [*John a fool*] is thus both the D-structure and the S-structure representation of the sentence (Chomsky 1981: 32-3, 1986a: 90-1).

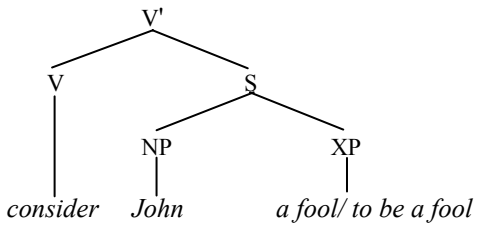
One final reason for favouring SC-analyses in GB-theory lies in the requirements of the categorial component of grammar (for more details see 5.3). Both the complex-transitive analysis and the Raising analysis (at surface structure) assume that a verb such as *consider* has two phrases as sisters:

(60)



Such ternary branching is prohibited by more recent developments in the theory of the categorial component, however. The new postulate that branching must be binary is, like the Theta-Criterion, based on theoretical rather than empirical arguments and is explained slightly differently from author to author. Kayne, an early proponent of binary branching, argues that there is an 'unambiguous-path' requirement on government, which is violated by the configuration in (60). NP and XP/VP must both be governed by the verb in this structure; yet, Kayne claims, there is no unambiguous path from either NP or XP/VP to the governor V because if one traced the path from, say, NP, one would have to make a choice between the branch leading to V and the branch leading to XP/VP. Since government is subject to the unambiguous-path requirement, the branch leading to XP/VP would be in violation of this injunction (Kayne 1984: 130-2). Kayne consequently argues for the alternative configuration (61), where V unambiguously governs the subordinate clause and XP/VP unambiguously governs its subject NP (1984: 133-5).

(61)



Whatever the particular theoretical reasons offered for the binary-branching requirement in GB-theory or the MP, it has become the consensus opinion in generative syntax (e.g. Wilder 1994: 220) and has conspired with the Theta-Criterion and the Projection Principle to disallow the Raising analysis, or, for that matter, the complex-transitive complementation analysis, and to favour the SC-analysis.[42]

The treatment of NP_2 XP-strings as SCs has become the standard view in generative textbooks[43] (e.g. Haegeman and Guéron 1999: 109), and some syntacticians have taken up the notion so enthusiastically that they apply SC-analyses "to almost every other construction in one form or another" (Stowell 1995: 271; cf. also Moro 1995: 109). Yet despite the voluminous literature on SCs published in the last two decades, most of the details of the SC-analysis still command no consensus (Aarts 1992: 21; Basilico 2003: 1; Ogawa 1994: 447; Suzuki 1991: 27), and the Raising analysis surfaces in the literature from time to time despite its having being banished from mainstream generative grammar as a "heresy" (Koster 1984: 445) — a fact that is frequently lamented by Raising proponents (cf. Hantson 1989: 207; Koster 1984: 445; Postal and Pullum 1988: 665). There are basically two issues that still provoke animated discussions with regard to the SC-analysis: the first concerns the fundamental question if SCs really form clausal constituents, with NP_2 representing the subject of a verbless clause (Nakajima 1991a: 3-4; Williams 1983: 287). In other words, is there really a clause boundary between the matrix verb and NP_2, i.e. are NP_2 and XP exhaustively dominated by some SC-node? In purely semantic terms, dependent nexus objects a.k.a. SCs make sense because they offer a disarmingly easy solution to the predicative relationship between NP_2 and XP — the subject/predicate relation is simply a direct reflection of the fact that the two phrases form a clause (Stowell 1995: 272). Yet the concept of SCs is not so easy to swallow in syntactic terms because NP_2 has a number of typical direct-object characteristics and the NP_2 XP-string

[42] The Projection Principle is no longer valid in the MP, which has done away with the distinction between D-structure and S-structure; Theta Theory and particularly the binary-branching requirement still force the SC-analysis in this framework, though (Kleanthes K. Grohmann, p.c.).

[43] The SC-analysis has not, however, influenced the description of the phenomenon in reference grammars to any considerable degree. The notion 'SC' is, for example, merely mentioned cursorily in a footnote in Huddleston and Pullum (2002: 218, footnote 5). Biber *et al.* only speak of verbless clauses in cases such as "*Although not a classic, this ... video is worth watching*", where the subject of the adverbial clause is controlled by the subject of the main clause (1999: 201). Even though descriptive and generative grammars often tackle the same linguistic problems, the theory-laden analyses of generative grammar do not readily translate into a descriptive framework.

does not exhibit any overt clausal features. It thus has to be proved that a matrix verb like *consider* "subcategorises semantically and syntactically for a proposition rather than for two separate arguments" (Aarts 1992: 37). The semantic fact that there is a subject/predicate relation is only a necessary condition for an SC-analysis, which must be combined with the syntactic fact that we are dealing with an NP_2 XP-constituent. To qualify as a clause, the NP_2 XP-construct must be satisfactory on both counts. Since this discussion is concerned with the very existence of SCs as syntactic entities, Stowell has aptly characterised SCs as "the black holes of syntactic theory" because "most of the discussion about them has been devoted to the question of whether they exist" (1995: 271).

The second issue builds on the first one: if one accepts that the NP XP-string constitutes a clausal constituent, the categorial status of the SC-node dominating this string must be described within the narrow confines imposed by the categorial component of grammar. The first issue can and will be couched in largely theory-neutral terms (5.2); the question of the categorial status of the SC-node is inextricably linked to the framework of generative grammar, though. Since formal structural descriptions are the generativists' weapons of choice, we have no alternative but to pick up these weapons as well (5.3).

5.2 Attempts to prove the existence of a black hole: are small clauses syntactic entities?

Before going on to more special and frequently theory-internal problems, most publications on SCs begin by furnishing several pieces of evidence in favour of the SC-analysis. A considerable part of this evidence has become received wisdom in SC-theory and is simply handed down from author to author without being critically re-examined. It is my intention to sift through the putative evidence for SCs and to subject it to a more extensive and focused analysis than is usually done. Since the arguments for SCs as syntactic entities fall into the two broad categories of constituency tests and tests trying to demonstrate the subject status of NP_2, I will arrange my discussion accordingly.

5.2.1 A critical look at constituency tests

In order to demonstrate the constituency of the NP_2 XP-string, a number of structural environments have been identified that are assumed to be sensitive to the constituency of syntactic phrases.[44] Five such structural conditions recur in the literature time and again: (a) constituent

[44] An interesting exception is Wallace, who tries to come at the problem from another angle. He asks the psycholinguistic question if "native speakers really treat SCs as units or not" (1998: 129) and looks for answers by having paraphrases of sentences containing NP_2 XP-strings evaluated by volunteers; some of those paraphrases con-

coordination, (b) independent NP XP-strings, (c) NP XP-strings in subject position, (d) adverbials between NP_2 and XP, and (e) the syntactic behaviour of nominals derived from matrix verbs such as *believe* or *consider*. I will take them up in the order stated.

(a) *Constituent coordination*

In a coordination structure, two or more syntactic elements of the same kind are conjoined by a conjunction, typically *and* (Haegeman and Guéron 1999: 27; Huddleston and Pullum 2002: 66). Since it is commonly assumed that only constituents allow coordination, the elements that can be related in a coordination structure are usually identified as constituents (Aarts 1992: 37; Sportiche 1995: 289). The following sentences demonstrate that NP_2 (*as*) XP-strings can be coordinated, which would imply that they form constituents as well (cf. Aarts 1992: 37, 113):

(62) a. I consider [**this man an idiot**] and [**that man a genius**]. (from Aarts 1992: 37)
b. I had few friends, ..., but on the infrequent occasions when we met I could see from their faces that they pitied me, finding **me foolish** and **Syl a bore** (BNC G06: 104).
c. I couldn't stop myself thinking that Estella would consider **Joe's boots too thick** and **his hands too coarse**, and **our whole family common** (BNC EPU: 502).
d. Though born in Britain, he regards **himself as a citizen of Europe** and **Italy as his adopted home** (BNC K9C: 482).

If the hypothesis that only constituents can be coordinated were airtight, then the highlighted strings above would demarcate SC-constituents. The following data are inconsistent with this hypothesis, however. The highlighted sequences in (63) cannot be coordinated arguments of their respective verbs because they consist of two constituents each — at least in the standard analyses of these structures:

(63) a. I gave **this man five pounds** and **that man ten pounds**.
b. I convinced **Mary of my opinion** and **John of my wife's opinion**.
c. I sent **John to New York** and **Mary to Washington**.

Two different conclusions can be drawn from these data. It can either be argued that the strings [*this man five pounds*], [*Mary of my opinion*], and [*John to New York*] do form clause-like constituents in a way that would have to be specified further, or that the coordination test

---

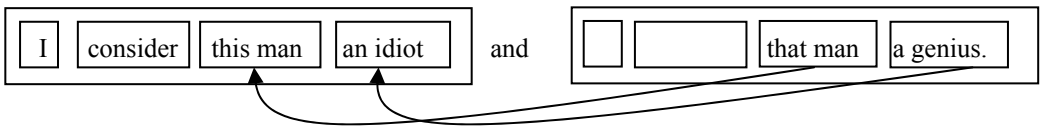
tain two constituents, and some only one. Although his testing procedures are laudable (1998: 129-31), the linguistic foundations of his study are doubtful. A sentence such as *Sue doesn't need* ***Chris on the team*** is paraphrased by the presumed one-constituent sentences *Sue doesn't need* ***Chris to be on the team*** and ??***For Chris to be on the team****, Sue doesn't need* and the putative two-constituent sentences *It is* ***Chris*** *that Sue doesn't need* ***on the team*** and ??***To be on the team*** *is what Sue doesn't need* ***of Chris***; a group of native speakers then has to evaluate the relative (un)acceptability of these paraphrases (Wallace 1998: 130). While it is generally problematic to make inferences about the structure or semantics of one construction from a structurally or semantically related construction, the inclusion of marginally acceptable sentences casts even more doubt on such an undertaking. Moreover, the results Wallace obtains do not permit a clear decision in favour of either the constituent or the non-constituent hypothesis (1998: 133-4).

is able to conjoin non-constituents as well in some cases. Sportiche opts for the first alternative because she claims that coordination is "[o]ne of the most robust tests of constituency" (1995: 289); by contrast, Aarts concedes that "coordination evidence is not wholly reliable, and we should perhaps regard it as suggestive at best" (1992: 113). I tend towards the latter opinion and think that it is intuitively more plausible to accommodate the data above as marked cases of non-constituent coordination rather than as cases of coordinated (small) clauses.

Thus, a more viable approach would be to claim that it is not the strings [*this man five pounds*] and [*that man ten pounds*] that are coordinated in (63a), but that we are dealing with two conjoined VPs (or even sentences), the verb (and maybe even the subject) being elliptical in the second conjunct because it is recoverable from the first: *I* [*gave this man five pounds*] *and* [(*gave*) *that man ten pounds*] or [*I gave this man five pounds*] *and* [(*I*) (*gave*) *that man ten pounds*]. A similar structural representation can then be used as a means to disconfirm the claim of SC-theoreticians that the highlighted sequences in (62) must be constituents: [*I consider this man an idiot*] *and* [(*I*) (*consider*) *that man a genius*]. If both constituents and non-constituents can be coordinated, the question arises how non-constituent coordination based on ellipsis can be distinguished from true constituent coordination as in ***John*** *and* ***Mary*** *went to New York* or *I* ***admire Bach*** *and* ***love Beethoven***. One indication is stress: elliptical constructions are usually accompanied by contrastive stress on the non-constituent conjuncts, while there is no comparable focus on coordinated constituents (Hayashi 1991: 15; Hoeksema 1991: 683-5; Sag *et al.* 1985: 161): *I consider th**í**s man an idiot and th**á**t man a genius*. This quality of contrast can be regarded as the hallmark of elliptical coordination structures; all the elements that are not part of the contrast are left out in the second conjunct so that the contrasting elements can be more effectively put into relief.

From a Construction-grammar perspective, I prefer the following insertion analysis to the ellipsis account:

(64)



The same construction type is coordinated, with only the third and fourth elements of the conjuncts being different. It is therefore enough if the second conjunct simply provides the differing and contrasting constructional fillers because they can easily be associated with the rele-

vant roles of the immediately preceding construction.[45] Among other things, this representation does not force us to decide if only the verb or the verb plus the subject are elliptical in the second conjunct. No matter if we prefer the ellipsis or the insertion analysis, though, it is clear that the bracketed strings in (62) need not be regarded as true constituents.

(b) *Independent NP XP-strings*

Predicative NP XP-strings that occur independently of a main verb are another commonly invoked criterion for SC-constituency. Aarts presents the short conversation in (65), where the bracketed string should, in his view, be analysed as a clause because it establishes a subject/predicate relation on its own (Aarts 1992: 38):

(65) A. Do you consider that man an idiot?
B. [**That man an idiot**?] You must be joking! (from Aarts 1992: 38)

However, the string [*That man an idiot*] again lends itself more easily to an ellipsis or insertion account. The verb *consider* is not repeated in B's reply, but it can easily be computed from the preceding question. A similar example with *give* impedes drawing the conclusion that the two elements form an independent clause because the relation holding between *My car* and *to that woman* is clearly dependent on the predicate *give* in the sentence before:

(66) A. Did you give your car to that woman?
B. **My car to that woman**? You must be joking!

Again, contrastive stress on the elements *Mý car* and *to thát woman* as well as on *Thát man* and *an ídiot* indicates that the highlighted strings in (65) and (66) do not consist of one, but of two constituents each. Ellipsis or constructional insertion thus seems to be possible across speakers in discourse as well: "In the give-and-take of conversation, the speaker and the addressee leave out what is easily recoverable from the linguistic or situational context ... In conversation, a minimum amount of form is put to maximum use" (Biber *et al.* 1999: 157; cf. also Jackendoff 2002: 394). Significantly, such independently occurring elliptical structures, which Fillmore, Kay and O'Connor aptly call "Incredulity Response Construction[s]" (1988: 511), are restricted to "echo-contexts" and cannot be used at the beginning of a conversation (Radford 1988: 330): A. **Your car to that woman?* A related, but somewhat special case are signs such as [*Doors open*] or newspaper headlines such as [*The president dead*!] (cf. Aarts 1992: 39), where the predicate (usually a form of *be*) is left out for reasons of space, but can

[45] Interestingly, a contrast between two elements seems to be the maximum; if the second conjunct differs from the first in three elements, the coordination structure becomes difficult to process: ??*John considers this man a fool and Mary that man an idiot* (cf. Culicover and Wilkins 1986: 141; Postal 1974: 129-30).

again easily be supplied — this time not from the linguistic context, but from the knowledge speakers of English have of related unshortened copula constructions.

(c) ***NP XP-strings as subjects***

If predicative NP XP-strings are clauses, some explanation must be provided for the fact that their occurrence is virtually restricted to postverbal position, while infinitival and finite clauses can also form the (extraposed) subject of sentences:

(67) a. That John loses in tennis is very unusual./ It is very unusual that John loses in tennis.
b. For John to lose in tennis is very unusual./ It is very unusual for John to lose in tennis.
c. *John a loser in tennis is very unusual./ *It is very unusual for John a loser in tennis.

Safir confronts this problem head-on by pointing to the fact that copula sentences exceptionally allow 'honorary NPs' as subjects, i.e. phrases that are barred from NP-positions in other sentences, such as the PP in "*Under the bed is a cozy spot*" (vs. "**Under the bed pleased the cat*") or the past participle in "*Unwanted is a terrible way to feel*" (vs. "**Unwanted would please the cat*") (1983: 731). He goes on to claim that SCs can also act as 'honorary NPs' in copula constructions:

(68) a. **Workers angry about the pay** is just the sort of situation that the ad campaign was designed to avoid. (from Safir 1983: 732; my emphasis)
b. **Men nude on the street** appears to be the puritan's worst nightmare. (from Starke 1995: 263, footnote 7)
c. **John and Bob as chairmen** is a good idea. (adapted from Aarts 1992: 113)

Safir maintains that *workers angry about the pay* in (68a) is not a normal postmodified NP because it does not trigger plural agreement on the copula, but is an SC that, like other clauses, induces singular agreement (1983: 732-3; similarly, Aarts 1992: 44; Haegeman and Guéron 1999: 120). If it is further accepted that the subject position can only be occupied by true constituents, the data in (68) seem to indicate that SCs are constituents (Contreras 1987: 226; Stowell 1983: 299). From this piece of evidence Safir concludes that all NP XP-strings, including those that occur postverbally, must be SCs: "since one is forced to accept some CISCs [clausally interpreted SCs; H.S.] as constituents, it is reasonable to assume that the world is as simple as possible", so "any clausally interpreted construction ... is a constituent in syntax" (1983: 733-4).

The world is more complicated, though. For one thing, Safir's account does not offer an explanation for the fact that SCs can only function as 'honorary NP'-subjects in copula clauses, while finite and non-finite clauses are under no such constraint (cf. 67). Moreover, if the highlighted strings in (68) are really clauses, it is not clear why a bare XP cannot be realised by an NP as well: **John and Bob chairmen is a good idea*. *Pace* Safir, I agree with Baltin that it is in

fact possible to analyse *workers* in (68a) as an ordinary NP subject that is postmodified by an adjectival phrase (Baltin 1998: 514). The disparity between plural subject and singular copula can be explained by notional agreement between the subject and the verb if *workers angry about the pay* is interpreted as a situation (cf. *The situation that workers are angry about the pay is something the ad campaign was designed to avoid*). Baltin offers examples of notional agreement where the highlighted strings are clearly not clauses but ordinary NPs (69a, a') (1998: 514); along the same lines, (69b) and (69c) are paraphrases of (68b) and (68c), respectively:

(69) a. **Several angry workers** is just the sort of situation ...
a'. **Workers who are angry about the pay** is just the sort of situation ...
(from Baltin 1998: 514; my emphasis)
b. **Nude men on the streets** is the puritans' worst nightmare.
c. **John applying for the post of first chairman and Bob applying for the post of vice-chairman** is a good idea.

In view of these sentences, Safir's argument that the subject position can be used to demonstrate the constituency of predicative NP XP-strings collapses in itself.

(d) ***Adverbial modification of NP$_2$ XP-strings***

Since adverbials with sentential scope modify the whole clausal constituent in which they occur, they are regularly adduced by adherents of SC-theory to demonstrate that NP$_2$ XP-strings form clausal constituents. Adverbials of time and frequency are, as a rule, not possible between NP$_2$ and (*as*) XP (**John considers Mary today/frequently ill-tempered*), for reasons that are explained independently in SC-theory (see 5.3.3), so we have to restrict our discussion to modal adverbials. SC-theoreticians would argue that the scope of *probably* in (70a, a') extends over the whole bracketed string but not the rest of the sentence, which means that this string must be a clause (Aarts 1992: 45; Stowell 1991a: 189-90). To substantiate this conclusion, Aarts shows that (70a) can be paraphrased by a true subordinate clause (70b), but, he continues, it cannot be rephrased as (70c), where the sentence adverbial is in the main clause and modifies the matrix proposition (1992: 45-6).

(70) a. I must admit that I have found [these summer international schools **probably** the most rewarding part of my work]. (from Aarts 1992: 45; my emphasis)
a'. Robertson regards [France as **probably** the most sinister and duplicitous force in the EC] (BNC ECU: 1239).
b. I must admit that I have found that [these summer international schools are **probably** the most rewarding part of my work]. (from Aarts 1992: 46; my emphasis)
c. I must admit that I have **probably** found [these summer international schools the most rewarding part of my work]. (from Aarts 1992: 46; my emphasis)

I can think of two lines of attack against this argumentation. Firstly, if NP$_2$ (*as*) XP-strings really formed clausal constituents, then they should not tolerate adverbials that modify the

main proposition. Yet such main-clause adverbials are possible between NP_2 and (*as*) XP, contrary to the predictions of SC-theory (71a, a'), while they are not found in true subordinate clauses (71b). What is more, sentence (71c) with an NP_2 *as* XP-string and (71c') with a subordinate *that*-clause differ in meaning, with the adverb modifying the main clause in the former (meaning: 'it is easy to assume that Bob is the elder brother') and the subordinate clause in the latter example (meaning: 'you could think that Bob is a lot older than his brother') (cf. Borkin 1984: 36; Postal 1974: 146-7).

(71) a. We considered Bush **among ourselves** as the probable winner.
(from Hoeksema 1991: 703; my emphasis)
a'. Mary considers her dog — **correctly I'm afraid** — her best friend.
(from Hoeksema 1991: 703; my emphasis)
b. *Jane believes that Bob, **if I am not mistaken**, is Hungarian.
(from Postal 1974: 146; my emphasis)
c. ?You could regard Bob **easily** as the elder brother.[46]
c'. You could think that Bob is **easily** the elder brother.

If adverbials between NP_2 and (*as*) XP modify the main clause and not a subordinate proposition as they do in *that*-clauses, NP_2 (*as*) XP-strings are apparently not clausal at all. To account for a sentence such as (70a), where *probably* does not have main-clause scope, I must come to my second objection against the adverbial test as used by SC-proponents. (70a) and (70b) are similar in meaning, but they can be argued to differ in structure. In (70b), *probably* undoubtedly has sentential scope and modifies the validity of the proposition expressed in the subordinate clause. Yet it is not so clear that it has sentential scope in (70a), too. *Probably* could as well be part of the NP *the most rewarding part of my work* and merely restrict the validity of this NP, rather than that of the whole bracketed string. Several pieces of evidence actually favour the latter analysis. In (72a), the placement of the quotation marks implies that *probably the most exciting thing* is treated as a constituent by the writer of this sentence, and not some clause that would also include the alleged subject *this*. More convincingly perhaps, it is again possible to construe comparable examples with *give*. In (72b) the adverbial has sentential scope, whereas in (72b') the scope only extends over the following NP. There is therefore no reason why one should not extend this analysis to sentences with *find* or *consider* as well. The sentences (72c, c') have been constructed to corroborate this thesis: a possible afterthought to (72c), where *probably* only restricts the NP, may change the modifications of this NP; an afterthought to (72c'), where *probably* restricts the matrix proposition, would more felicitously comment on the validity of this main-clause modification.

[46] The placement of *easily* between *Bob* and *the elder brother* is more natural with comma intonation: *You could regard Bob, easily I think, as the elder brother*. In any case, *easily* modifies the main proposition in this sentence like in the more idiomatic *You could easily regard Bob as the elder brother*.

(72) a. She considers this 'probably the most exciting thing I've been involved with' (BNC A7D: 515).
b. I should **probably** give her 100 pounds, but I don't want to.
b'. I should give her **probably** 100 pounds, maybe even 200.
c. I consider summer camps **probably a rewarding** experience, **maybe even a life-changing** experience.
c'. I think that summer camps are **probably** a rewarding experience — of course, they **are** a rewarding experience, there cannot be any doubt.

The data in (71), where adverbials between NP_2 and (*as*) XP modify the main clause, coupled with the alternative analysis of narrow-scope adverbs as NP-modifiers illustrated in (72), count strongly against the claim that the postverbal string of *consider*-type verbs forms a clausal constituent.

(e) *Derived nominals*

One final argument that is repeatedly put forward for SC-constituency is a bit more exotic and a good deal more theoretical than the preceding four and therefore justifies a more cursory treatment. Kayne argues that ordinary transitive clauses have derived nominal counterparts (73a), while sentences with *consider*-type verbs do not (73b) (1984: 151-2).

(73) a. The enemy destroyed the city. ⇒ The enemy's destruction of the city
b. John considers Mary a genius. ⇒ *John's consideration of Mary a genius

Kayne explains the impossibility of the transformation in (73b) within the framework of Case theory (for details see 5.3)[47]: while the noun *destruction* in (73a) can govern and assign Case to the NP *the city* with the help of the preposition *of*, the noun *consideration* cannot govern and assign Case to *Mary* because a putative SC-boundary intervenes (1984: 152, 155).[48] If the ungrammaticality of the derived nominal in (73b) is due to a clause boundary between the head noun *consideration* and the string *Mary a genius*, this string can be argued to "form an embedded constituent" (Kayne 1984: 155).

I am not very happy with such theoretical explanations because they tend to be rather stipulative in nature and require us to buy a whole syntactic framework in order to interpret a specific syntactic problem. Fortunately, it seems to be possible to come at the problem from a different angle. Derived nominalisations are ungrammatical when the base verb has two non-prepositional postverbal arguments, whether they could be claimed to form a (small) clause as

[47] Case is an abstract notion in generative grammar and is not identical with empirically observed case forms. All NPs are assumed to be specified for Case, whether this case has a morphological reflex or not (Cook and Newson 1996: 223) — for this reason, the term 'Case' as used by generative grammarians is usually spelled with a capital 'C'.

[48] Generative grammarians attribute this to a principled difference in the Case-assigning properties of nouns and verbs. While the verb *consider* can assign Case to the subject of the SC, nouns such as *consideration* cannot: "Somehow, the impact of a verb on its complement is stronger than that of an N" (Haegeman and Guéron 1999: 441; cf. Kayne 1984: 143).

in (73b) or not as in (74a). Such nominalisations become possible, however, if the second postverbal argument of the verb is introduced by a preposition that the derived nominal can inherit (74b, b').

(74) a. John offered Bob the money. ⇒ *John's offer of Bob the money
b. John offered the money to Bob. ⇒ John's offer of the money to Bob
b'. John converted Mary to Catholicism. ⇒ John's conversion of Mary to Catholicism

We could consequently assume that (74a) is ungrammatical because the NP *the money* is not properly tied to its head noun *offer*, unlike the NP *Bob*, which is linked to the head noun by the 'all-purpose' preposition *of*, while (74b, b') are grammatical because the base verbs provide the nominal constructions with an extra preposition that can be used to link the arguments *Bob* and *Catholicism* to their respective head nouns. The only way to tie the second postverbal argument of secondary-predicate constructions to a derived nominal is to use the preposition/conjunction *as* (or *into* with some resultative constructions) insofar as it is licensed by the corresponding base verb. Such derived nominals are clearly possible as opposed to the one provided in (73b):

(75) a. The plant transforms solar energy into electricity. ⇒ I support **the transformation of solar energy into electricity**. (ROS: 0)
b. I can't understand why the members elected John as chairman. ⇒ I can't understand **the members' election of John as chairman**. (ROS: 5)
c. The president views the situation as a danger to our nation. ⇒ I can't understand **the president's view of the situation as a danger to our nation**. (ROS: 5)

The way arguments of verbs are syntactically inherited by derived nominals is still poorly understood and requires more extensive research. What is relevant for the matter at hand is that the sentences above vitiate Kayne's claim that verbs presumably selecting SCs cannot be converted into nominals (1985: 102) — they can, provided that the respective base verbs license a 'connecting word' such as *into* or *as*.

All five of the tests discussed constitute *prima facie* evidence for the constituency of predicative NP XP-strings, but none of them stands up to closer examination. Even if we granted the argumentation of SC-proponents with respect to these tests, every SC-analysis must confront distributional mismatches from structural environments where NP and XP can occur separately within the main clause. In what follows, I will summarily review some typical non-constituency evidence.[49]

[49] In isolation, none of these pieces of evidence is potent enough to disprove the clausehood of the NP XP-string because generative grammar assumes that elements can cross clause boundaries (cf. *the house which*$_i$ *he said* [*he wanted to buy* t$_i$]) (Thomas Hoffmann, p.c.). Nevertheless, the relative ease with which NP and XP can be separated from one another, coupled with the fact that they can almost never be transposed in combination, bode ill for the constituency analysis.

(i) Elements that can be moved around in the sentence as a unit are commonly identified as constituents (Biber *et al.* 1999: 94; Haegeman and Guéron 1999: 46). Direct or indirect questions form a good syntactic environment for such movement operations because strings that can be placed at the beginning of a question may be considered constituents. It is possible to front NP_2 (76a) in a question, and — even if to a considerably lesser degree — (*as*) XP as well[50] (76b, b'):

(76) a. **Who** do you consider a fool?
b. I'm sure you know **how vital** The Office considers this whole business. (BNC H86: 1860)
b'. **What** does the book, The Joy of Sex, describe an orgasm as? (BNC KCU: 9022)

(ii) A special case of movement is topicalisation, where a constituent is fronted in a declarative sentence for reasons of information structure. While *that*-clauses can be topicalised under suitable pragmatic circumstances (77a), NP_2 (*as*) XP-strings can never be moved to the beginning of a sentence (77b) (Kluender 1985: 285; Raposo and Uriagereka 1995: 180-1). However, given the right pragmatic conditions (see Biber *et al.* 1999: 900-5 for a description of topicalisation conditions), the NP_2 (77c, d) and — less typically — the XP (77e, f) can undergo topicalisation (out of context, (77e, f) do not sound very natural, though).

(77) a. **That Mary is the murderer** I simply can't believe.
b. ***Mary the murderer** I simply don't consider.
c. ?**The others**, Mary considers ugly. (ROS: 35)
d. **This** I still consider the most brilliant course of lectures I have ever heard anywhere (BNC H9X: 319).
e. ?**An ugly yellow** they have painted their house. (ROS: 50)
f. **Beautiful** I have never considered Mary ??(to be).[51]

(iii) In cleft-constructions, information that could be included in one clause is broken up into two clauses in order to put a particular sentence element into relief (Huddleston and Pullum 2002: 67; Jackendoff 2002: 410-1). The focal element of an *it*-cleft appears in the first half of the construction, while the foregrounded element is inserted into the second half of a *wh*-cleft

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[50] The fronting of XP in questions and other structural environments is much more frequent in the corpus when *to be* is also present in the construction:

a. "[**W**]**hat** do you consider yourself **to be**?" (APC: 473)
b. But Cureton then groups clitic phrases into **what** he considers the intonational structure **to be**. (BNC J7S: 64)
c. **'Successful'** though it is deemed **to be**, the new Cavalier took seven years from conception to launch. (BNC EDT: 2084)

Ross has aptly characterised the phenomenon that XPs can hardly be fronted unless the infinitival copula is present in the sentence as "*be*-less frost" (1981: 469) and has also shown that this effect is strengthened in passive sentences: my informants were not bothered too much by an example such as ?*How smart do they consider John?* (ROS: 32), but the passive version ??*How smart is John considered?* was frequently rejected (ROS: 67), as opposed to *How smart is John considered to be?* (ROS: 22). The exact reasons why fronting is better in QUALIFYING Constructions with *to be* than in those without *to be* still elude me.

[51] Fronting is again more natural with *to be* present; ??*Beautiful I have never considered Mary* received an ROS of 65, while ?*Beautiful I have never considered Mary to be* was only rated with an ROS of 40 (see the discussion in the preceding footnote).

(also commonly known as 'pseudo-cleft') (Biber *et al.* 1999: 959). Since it is only constituents that can be focused in cleft-constructions, these patterns provide another suitable environment for constituency tests (Haegeman and Guéron 1999: 49). While a *that*-clause can appear in the focus position of a *wh*-cleft, an NP_2 (*as*) XP-string cannot be cleft felicitously (78a, a').[52] On the other hand, NP_2 can be the specially focused element of both an *it*-cleft and a *wh*-cleft (78b, b'); as a predicative phrase, (*as*) XP is only very marginally acceptable in *it*-clefts (78c) (Emonds 1984: 133-4), but is possible in *wh*-clefts (78c').

(78) a. What John thinks is **that Mary is extremely beautiful**.
a'. *What John considers is **Mary extremely beautiful**.
b. It is **Mary** that John considers extremely beautiful.
b'. Who John considers extremely beautiful is **Mary**.
c. ??It's **as a complete disaster** that John regards the party. (ROS: 65)
c'. ?What they elected John as is **chairman**. (ROS: 35)

(iv) A final syntactic environment that can be used to counter the claim that NP_2 XP-strings are constituents is the 'Right Node Raising' (RNR) construction. When two coordinated sentences contain an identical constituent, this constituent can, in generative parlance, be "lifted, or 'raised', out of the two parallel ... positions and function[.] as an argument for both of them" (Haegeman and Guéron 1999: 52). This pragmatically marked construction is typically used when the meaning of the verbs in the two conjuncts is to be contrasted with respect to their common argument. RNR is not a sufficient test for syntactic constituency because non-constituents can sometimes undergo this process as well, but if a string cannot be 'raised' to the right end of the sentence, it is very probably not a constituent (Kluender 1985: 280-1). What is interesting in our context is that putative SCs, unlike *that*-clauses, cannot undergo RNR (79a, a'). (*as*) XP, however, can easily be factored out from two conjoined sentences by itself (79b).

(79) a. I find it easy to believe — but Mary finds it hard to believe — **that John is dead**.
a'. *I consider, and even John considers, **Mary intelligent**.
b. I regard you, and in fact you regard yourself, **as more beautiful than Mary**.

Each of these four tests jars with the assumption of SC-theory that predicative NP XP-strings form clausal constituents. If SC-proponents want to stick to the constituency hypothesis in the face of all this evidence to the contrary — as they typically do —, they need to work opportunistically on a massive scale: they must both take their own constituency tests at face value and ignore or explain away the non-constituency evidence. There are two common strategies to rationalise the impossibility of putative SCs to undergo the constituent movements described above: one is to argue that "these tests — unlike, say, constituent coordination, are not

[52] Since *it*-clefts can only be used to foreground nominal elements, they principally disallow clausal structures in the focal position.

necessary and sufficient conditions for constituency" (Sportiche 1995: 290) — a doubtful objection when we consider the precarious basis of such tests as constituent coordination. Alternatively, the unacceptability of these movement operations could be attributed to independent theory-internal reasons such as the fact that NP_2 cannot be assigned Case in the moved position (Stowell 1983: 301).

As we will see in the following chapter, the claim that NP_2 is the subject of an SC does not fare much better on closer examination.

5.2.2 A critical look at subject tests

Besides the evidence coming from constituency tests, NP_2 XP-strings might also be identified as clauses if it could be demonstrated that NP_2 behaves like the subject of its own clause and not like the direct object of the matrix verb. Five more pieces of evidence are commonly marshalled in the SC-literature to argue for the subjecthood of this phrase; these include (a) non-referential elements in the NP_2-position, (b) *alone*-final and *not*-initial noun phrases as NP_2, (c) evidence from binding, (d) the behaviour of floating emphatic reflexives, and (e) extraction data. These tests will be closely examined and evaluated in the following sections.

(a) *Non-referential elements in the NP_2-position*

Generative grammar presupposes the existence of a class of dummy or expletive pronouns such as *it* and *there*, which do not refer to an entity in the discourse but are devoid of any semantic content (Haegeman and Guéron 1999: 42-4; Postal and Pullum 1988: 635-6; Rizzi 1986: 526). Expletives are maintained to be restricted to subject position and to be impossible as, for instance, the direct object of a clause: as a consequence of the Projection Principle, a direct-object position can only be created in the syntax if it is subcategorised for and θ-marked by the verb (Hoekstra 1988: 108; Rizzi 1986: 527); according to the Extended Projection Principle, however, sentences are required to have a subject position, irrespective of whether the verb assigns a subject θ-role or not (Grewendorf 2001: 20-1; Haegeman and Guéron 1999: 392). As a result, direct-object positions are always theta-positions, while the subject slot can be filled by a non-referential element when there is no thematic argument available for that position (Cook and Newson 1996: 179-80; Hoekstra 1988: 108).

If the postverbal NP of *consider*-type verbs is the subject of an SC, it should be tolerant of expletive pronouns. This prediction is to a certain degree borne out by the following sentences: in (80a), the so-called 'anticipatory' or 'extrapositive' *it* can be claimed to be in construction with the extraposed notional subject *that she has resigned* (cf. Chomsky 1986a: 91;

Haegeman and Guéron 1999: 120); in (80b), the NP_2-position is presumably filled by the non-referential 'weather/time-*it*' (cf. Aarts 1992: 38; Haegeman and Guéron 1999: 43-4; Kitagawa 1985: 213). Existential *there*, on the other hand, cannot occupy the NP_2 slot (80c) (cf. Aarts 1992: 38; Law 1996: 508).[53]

(80) a. I consider [**it**$_i$ a pity [that she has resigned]$_i$]. (from Haegeman and Guéron 1999: 121)
b. I find [**it** rather hot].[54] (from Aarts 1992: 38)
c. *I consider [**there** a problem]. (from Aarts 1992: 38; my emphasis)

None of these cases is trivial, and each of them deserves a separate and more focused treatment.

The theory of GB requires one to interpret *it* in (80a) as an extrapositive subject and the sentential constituent [*that she has resigned*] as the extraposed notional subject. Descriptive grammars, however, which do not have such postulates as the Projection Principle and the Extended Projection Principle in their framework, do not bother to call the expletive in this sentence an extrapositive object and the sentential constituent it is in construction with an extraposed notional object (e.g. Huddleston and Pullum 2000: 247, 252-3). Postal and Pullum have been able to show that it is, in fact, mandatory to accept extrapositive *it* in the direct-object position as well. In examples (81a, a'), *it* is followed by main-clause adverbials and objects and therefore cannot be the subject of a subordinate clause (cf. Postal and Pullum 1988: 642-4). But even if there is no additional main-clause material, *it* cannot be analysed as a subject because the subordinate (small) clause would contain nothing but this expletive element and its extraposed sentential subject (81b, b') (Postal and Pullum 1988: 645).

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[53] Besides expletive pronouns, SC-theoreticians also sometimes adduce other non-thematic fillers of the NP_2-position. Hoekstra, for example, claims that this site can be occupied by derived subjects, which, like expletives, do not receive a subject theta-role from the verb (1992: 148). His example sentence *We found* [***this conclusion***$_i$ *arrived at* t_i *too easily*], where the NP *this conclusion* has presumably been moved from the thematic object position of *arrived* to the subject position in the corresponding passive, was unanimously rejected by my informants, however. In addition, idiom chunks are maintained to be possible in the NP_2-slot as well: *Consider* ***your leg*** *pulled* (Bresnan 1982: 79), *I consider* ***headway*** *unlikely to be made on this bog* (Ross 1981: 465), *I consider* ***real advantage*** *unlikely to be taken of that offer* (Postal 1974: 196, footnote 7). Since idiom chunks can only be interpreted with respect to the rest of the idiom, they are asserted to be athematic arguments that occupy the subject position of an SC such as [***real advantage*** *unlikely to be taken of that offer*]. Apart from the fact that such sentences are again far from perfectly acceptable (the ROS of Bresnan's sentence is 20, of Ross's sentence 35, and of Postal's sentence 72), they do not pose a problem in Construction grammar: if it is assumed that all syntactic constructs are idiomatic to a certain degree and depend on the rest of the construction for their interpretation, no firm line can be drawn between these idiomatic expressions and other constructions. Most idioms are thus not unanalysable, but only less schematic than other syntactic structures (Langacker 1987: 94; cf. 3.3). As a consequence, *headway* or *real advantage* are not athematic idiom chunks, but meaningful elements that can occupy the thematic object position.

[54] Since verbs such as *find* or *consider* express subjective opinions, the weather-expression in the XP-slot must allow some latitude for personal interpretation. My informants rejected a sentence such as ??*I consider it rainy* because rain is a fact that can be observed and is thus not really open to subjective interpretation; the sentence becomes fine, however, when the speaker can interpret degrees of 'raininess' with respect to some specific purpose, as in *I consider it too rainy to go hiking*.

(81) a. I regret it **very much** that you could not come to the party.
a'. I mentioned it **to Sally** that Mary was jealous of her.
b. I take **it that Mary will come to the party**.
b'. I would prefer **it if John didn't come**.

The claim that extrapositive *it* is possible as a direct object as well has obvious ramifications for GB-theory because the direct-object position, like the subject position, must be assumed to be possible as a non-theta position as well in some cases (cf. Postal and Pullum 1988: 663-7, who also discuss the consequences this could have for a rehabilitation of Subject-to-Object Raising). What is important for our purpose is that there is no principled reason to argue that the *it* in (80a) must be a subject instead of a direct object.

SC-theoreticians interpret the 'weather/time-*it*' in (80b) as an expletive, arguing that what the subject finds is clearly not 'it', but rather the proposition 'it rather hot' (Aarts 1992: 38). Building on this interpretation, they maintain that *it* as a non-referential element cannot be assigned a θ-role and thus cannot function as a direct-object argument of the verb *find*. As a corollary of this, the pronoun must be the subject-slot filler of the clause *it rather hot* (Aarts 1992: 38; Staudinger 1996: 116-7). *Find* is consequently a bivalent verb, selecting a subject argument and a propositional object argument, but not a direct-object NP; (*rather*) *hot*, on the other hand, would be a zero-valent predicate, with 'weather-*it*' acting as the default dummy filler of the SC subject-slot. Although this reasoning has remained largely unrebutted in SC-theory, it is anything but clear that *it* in (80b) is really non-referential. While it is admittedly hard to replace 'weather-*it*' in a sentence with a meteorological verb (82a)[55], it is conceivable to rephrase (80b) as (82b). In this view, the pronoun *it* "can ... be understood as a normal referential *it*, though admittedly the reference is a bit vague" (Allerton 1982: 44-5). If we accept this analysis, *it* in (80b) could be analysed as a direct-object argument which vaguely refers to, for example, the weather, and *rather hot* as a secondary predicate which specifies the property of the weather.

(82) a. It has been raining for days.
b. I find [the weather/the sun/this room/the day *etc*.] [rather hot].

It would be preferable if we had some principled grounds on which we could decide between the analysis of 'weather/time-*it*' as a non-referential subject-slot filler and its analysis as a vaguely referring pronoun. There is, in fact, both a syntactic and a semantic argument that might tip the scales towards the latter analysis. The syntactic argument exploits an observation made by Chomsky (1981: 324). In sentences such as *The park rangers consider it hot enough to cause even more forest fires* (ROS: 10) or *I consider it windy enough to help the*

[55] In poetic language it may be possible to say something like *The clouds/the sky have/has been raining for days*, but this is clearly a stylistically and syntactically marked use of the structure.

kids fly their kites (ROS: 20), the consecutive clauses are controlled by 'weather/time-*it*'. Since controlled subjects assume the referential properties of their antecedents, *it* cannot be semantically vacuous in these sentences. 'Weather-*it*' and 'time-*it*' would have to be admitted as "quasi-arguments" (Chomsky 1981: 325), which bear "atmospheric or temporal θ-roles" (Rizzi 1986: 529). My semantic argument is of a more general nature: properties such as *rather hot* are inherently relational and cannot be construed in isolation, but must invariably be attributed to some entity (see the functional theory of syntactic categories given in 11.4.6.2). Whenever such an entity is rather abstract and difficult to denote, the vaguely referring pronoun *it* can be used; however, it is always possible to replace *it* with a more concrete denotation (cf. 82b).

Generative and descriptive grammars treat existential *there* as an expletive subject that is in construction with a notional NP, commonly called its 'associate'. The main function of existential clauses is to foreground new information, typically coded in an indefinite NP plus some place adverbial (83a) (Biber *et al.* 1999: 943-4; Haegeman and Guéron 1999: 121; Stowell 1978: 460). The standard structural analysis of existential clauses in generative grammar takes the string after the copula to form an SC (83b) (Grewendorf 2002: 104; Stowell 1978: 465; Law 1996: 493).

(83) a. There is a man in the room.
b. There$_i$ *be* [$_{SC}$ NP XP]$_i$.

Since existential *there* is one of the most typical expletive fillers of the subject slot, the ungrammaticality of (80c) has created some unease among SC-theoreticians. There have been various attempts to come to terms with this situation, none of which carries much weight, though. Lasnik, for instance, suggests that the obligatoriness of the copula in *We consider there* *(*to be*) *a man in the room*[56] is due to the fact that the associate NP *a man* needs to be assigned Case independently of the expletive *there*, which is Case-marked by the matrix verb *consider*. Since the copula is not normally thought to be a Case assigner, Lasnik proposes that it could exceptionally attribute 'partitive Case' to the NP in the existential construction (1992: 384, 391-5). Lasnik's account is rather stipulative and also contradicts the standard analysis of existential constructions in generative grammar, which assumes that the expletive *there* is assigned Case by the main verb, and that it can transmit its Case to the co-indexed associate NP (Haegeman and Guéron 1999: 507). Since a Case-related account for (80c) is not likely to gain wide acceptance, Law has urged a different procedure (1996: 506-7). He argues that **We*

[56] Even the sentences with *to be* are not very natural, though. Aarts' ?*I considered there to be a problem* (1992: 38) was evaluated with an ROS of 37, and Lasnik's ??*We consider there to be a man in the room* (1992: 384) received an ROS of 59.

consider there a man in the room is ungrammatical because it contains two SCs: *in the room* is predicated of the subject *a man* and the SC *a man in the room* is then predicated of the subject *there*. Not only is this double-SC account ludicrous in itself [57], though, but existential constructions without a place adverbial (e.g. 80c) would remain intractable to such an account. Law must have realised the untenability of his proposal himself because he makes an alternative suggestion as well. He claims that the subject of an SC needs to be a thematic position because it must be able to receive a θ-role from the SC-predicate; existential *there* can consequently not be tolerated as an SC-subject (Law 1996: 507-8). I do not know, however, how this explanation is to be reconciled with the Extended Projection Principle and the standard generative analyses of extrapositive *it* (80a) and 'weather/time-*it*' (80b). It might therefore be more rewarding to analyse (80c) from another stance: its ungrammaticality may not be due to the violation of some isolated syntactic or semantic principle, but could be the result of the functional incompatibility of the QUALIFYING Construction and the EXISTENTIAL Construction. While the former construction expresses some permanently stored opinion with respect to a familiar entity (see chapter 11), the latter construction is used to prepare the ground for the presentation of a new entity: *there* profiles "*abstract settings*, perhaps to be thought of as abstract *presentational frames* within which something is going to be introduced" (Langacker 1999b: 47; see also Biber *et al.* 1999: 951; Langacker 1991: 352-4). The same NP may, however, not be specified as simultaneously familiar and new within the same sentence.

To recapitulate, non-referential pronouns in the NP_2-slot cannot be used to demonstrate the subjecthood of this position: extrapositive *it* is possible both as subject and direct object, and 'weather/time-*it*' is more amenable to a treatment as a vaguely referring 'quasi-argument' than as a semantically vacuous subject-slot filler. Furthermore, it is not feasible to construct an argument around existential *there*, which is not found in the NP_2-position for functional reasons.

[57] As has already been shown, locative phrases are not possible in the XP-position even if there were only one SC (**We consider* [$_{SC}$ *a man in the room*]) because such phrases are not truly predicative (cf. 4.1.3). Moreover, if *there* is an expletive pronoun without any semantic content, how could it be assigned a θ-role, let alone a propositional θ-role, by the putative SC [*a man in the room*] anyway?

(b) Alone-*final and* not-*initial noun phrases as* NP_2

A second kind of evidence that has been marshalled in support of the subjecthood of NP_2 is *alone*-final and *not*-initial NPs, which allegedly can only be related to the subject, but not the direct object of a verb (Hayashi 1991: 21-2; Postal 1974: 95, 100; Radford 1988: 326).

NPs can be postmodified by the adverb *alone*, essentially meaning 'only' in this construction (Postal 1974: 99). *Alone*-final NPs are claimed to occur only in subject and not in direct-object position (84a vs. b); since they are found in the postverbal slot of verbs such as *consider*, it is concluded that this must be a subject position as well (84c) (Aarts 1992: 47).

(84) a. **Jones alone** knows the secret formula. (from Postal 1974: 99; my emphasis)
b. *Melvin hires **those plumbers alone**. (from Postal 1974: 99; my emphasis)
c. The head of department considers **MA students alone** good PhD students. (from Aarts 1992: 47)

Yet Aarts casts doubt on the validity of the *alone*-final test himself by providing the sentence in (85a), where the *alone*-final NP stands in the object position. To this we can add cases where *alone*-final NPs are not very felicitous in the postverbal position of *consider* or *regard* (85b, b'), while there is no such restriction on the subject position of a *that*-clause (85c):

(85) a. I gave **that girl alone** $60. (from Aarts 1992: 47; my emphasis)
b. ??I consider **Mary alone** beautiful. (ROS: 64)
b'. ? I regard **John alone** as intelligent. (ROS: 40)
c. I think that **Mary alone** is beautiful.

If we probe more deeply into the distribution of *alone*-final NPs, we see that their behaviour is more complicated than a neat division between subject and object might suggest. In subject position, the adverb *alone* has narrow scope over its NP, i.e. it throws special stress on the entity in this position, but does not extend its scope to any other entity in the clause. If *alone* is related to a direct object, however, it must have wide scope: it singles out the direct-object entity and contrasts it with some other entity in the linguistic or extralinguistic context. Stress usually serves as a disambiguating device: in the subject position, the stress is on *alone* (86a), while it is on the noun or its determiner in the object position (with maybe secondary stress on *alone*) because the referent of this noun is compared to other exemplars of its class (86b, b'). *Alone*-final NPs are not possible in direct-object position when a wide-scope interpretation would be implausible (e.g. 84b and 85b, b'), but are felicitous when a contrast can be construed (e.g. 85a: *I gave th**á**t girl alone $60, not the **ó**ther one*).

(86) a. This story al**ó**ne is true.
b. I believe th**í**s story alòne, not th**á**t one.
b'. I believe J**ó**hn alòne, not M**á**ry.

In this more sophisticated version of the test, *alone* can identify a subject if it has narrow scope, and a direct object if it has wide scope. If applied in this way, the *alone*-final test dismantles the argumentation of SC-proponents. My informants agreed that *alone* in (87a) has

wide scope, i.e. that it (implicitly or explicitly) contrasts German students with other students, while it has narrow scope in (87b), simply foregrounding German students without comparing them to anyone else.

(87) a. The head of the department considers G**é**rman students alòne good PhD students (not Fr**é**nch students).
b. The head of our department thinks that German students al**ó**ne are good PhD students.

SC-proponents attempt to make a similar point with the *not*-initial test as with the *alone*-final test. The negator *not* in front of an NP (usually one quantified by *many/much*) is claimed to occur only in subject (88a), but not in direct-object position (88b) (Aarts 1992: 47; Postal 1974: 95). Since *not*-initial NPs pass muster after *consider*, it is argued that this must be the subject position of an SC (88c) (Aarts 1992: 47; Radford 1988: 326).

(88) a. **Not many houses** were built here. (from Aarts 1992: 47)
b. *I like **not many houses**. (from Aarts 1992: 47)
c. The head of department considers **not many students** good PhD students. (from Aarts 1992: 47)

The *not*-initial test suffers of exactly the same problems as the *alone*-final test and can also be turned around against the SC-analysis. *Not* has narrow scope in the subject position, but must have wide scope in the direct-object position. *Not*-initial NPs as direct objects require contrastive stress (89a); if such a contrast is difficult to construe, the sentence becomes ungrammatical (cf. 88b) — unless constituent negation is replaced by sentential negation, of course (*I don't like many houses*). The position after *consider*-type verbs has wide scope (89b, b'):

(89) a. I kissed not J**ó**hn, but M**í**ke.
b. I consider not **á**ll of them liars, but certainly a l**ó**t of them.
b'. The head of department considers not m**á**ny students good PhD students, but only a h**á**ndful.

If anything, then, the results of both the *alone*-final and the *not*-initial test are overwhelmingly in favour of the objecthood of NP_2 and thus cannot be used as arguments for SCs.

(c) *Binding evidence*

Another piece of evidence that has been called into play in an effort to prove the subjecthood of NP_2 is data from binding. Since the Binding Theory is one of the most complex subtheories of generative grammar, we will have to trim away many details so that we can focus on the main lines of argumentation.

NPs such as *John* or *my neighbour* can establish their referent independently; they are consequently called 'referential' or 'R'-expressions (Haegeman and Guéron 1999: 376). Reflexives (e.g. *himself*) and reciprocals (e.g. *each other*), on the other hand, are referentially dependent on an antecedent NP; elements that must be bound by a co-referent antecedent are

commonly called 'anaphors' in generative grammar (Haegeman and Guéron 1999: 370). The main function of the Binding Theory is to establish the exact conditions for the binding relations between anaphors and their antecedents; the dominant mode of research attempts to capture binding relations in structural terms. The structural relation thought to underlie all binding configurations is asymmetrical c(onstituent)-command: an antecedent c-commands an anaphor if the first branching node that dominates it also dominates its anaphor (Haegeman and Guéron 1999: 364); in an asymmetrical c-command relation, the antecedent must be structurally higher in the clause than the anaphor it binds. This c-command relation must then be restricted to the right local domain (Grewendorf 2002: 26; Haegeman and Guéron 1999: 365): an anaphor can only be bound by its antecedent if it is asymmetrically c-commanded by it and if they are both in the same local domain. The definition of this binding domain constitutes one of the greatest research efforts in generative grammar, and the identification of the NP_2-position as subject or direct object crucially depends on this definition.

On its face, the local domain for binding relations seems to be the minimal clause that contains both the anaphor and its antecedent, with the antecedent functioning as the subject of the clause (Grewendorf 2002: 26; Haegeman and Guéron 1999: 365; Staudinger 1996: 119). SC-proponents argue that since a reflexive or reciprocal in the XP-position can be bound by an antecedent in the NP_2-slot, this must be the subject position of an SC (90a, a'); furthermore, the reflexive or reciprocal cannot be bound by the subject of the main clause because the embedded SC presumably intervenes (90b, b') (Chomsky 1981: 290-1; Contreras 1987: 228; Haegeman and Guéron 1999: 366; Safir 1983: 730; Stowell 1991a: 190).

(90) a. John considers [$_{SC}$ **Mary**$_i$ too proud of **herself**$_i$].
(from Haegeman and Guéron 1999: 366)
a'. John considered [$_{SC}$ **the men**$_i$ angry at **each other**$_i$]. (from Safir 1983: 730)
b. ***John**$_i$ considers [$_{SC}$ Mary too proud of **himself**$_i$].
(from Haegeman and Guéron 1999: 366)
b'. ***The men**$_i$ considered [$_{SC}$ John angry at **each other**$_i$]. (from Safir 1983: 730)

The definition of binding domain as minimal clause and of the antecedent as the subject of this clause is intuitively appealing, but empirically untenable. There are numerous cases where an anaphor is not bound by the subject, but by an object (91a-c):

(91) a. I talked to **John**$_i$ about **himself**$_i$. (ROS: 22) (from Croft 2001: 153)
b. Ralph described **me**$_i$ to **myself**$_i$ perfectly. (ROS: 18)
(from Napoli 1989: 306; my emphasis)
c. Wanda warned **the men**$_i$ about **each other**$_i$. (ROS: 14)
(from Napoli 1989: 303; my emphasis)

In view of these data, it is not clear that the antecedents in (90) could not also be direct objects. Moreover, the notion 'minimal clause' is problematic because if NP_2 is an anaphor itself, it can be bound by the main-clause subject (92a-b):

(92) a. **John**$_i$ considers **himself**$_i$ the winner.
b. **They**$_i$ consider **each other**$_i$ stupid.

In order to avoid the conclusion that *himself* in (92a) is a direct object bound by the subject *John* (cf. Huddleston and Pullum 2002: 1487), generative grammarians have modified the definition of binding domain. Since the matrix verb *consider* governs and Case-marks the SC-subject (see 5.3), the local domain for the SC-subject is thought to be the minimal clause that also contains its governor; in other words, the binding domain is extended to include the main clause as well in such cases, so *himself* can be bound by the matrix subject (Cook and Newson 1996: 251; Grewendorf 2002: 26-7; Haegeman and Guéron 1999: 368). The definition of local domain as 'governing category' has been acquired for a theoretical price, though: there is now an asymmetry between small and ordinary clauses because the subject of a finite *that*-clause, which is not governed by the matrix verb, cannot be bound by the main-clause subject (****John***$_i$ *thinks that* ***himself***$_i$ *is the winner*). If we interpret *himself* in (92a) not as a subject but as a direct object, this asymmetry is expected.

But the definition of binding domain as governing category is not only problematic theoretically, but empirically as well. Reflexives can also be bound within an NP (93a) (Grewendorf 2002: 27). If such an NP does not include a potential binder for the anaphor, the reflexive can be bound by the main-clause subject irrespective of whether it is found in the subject of a small or ordinary clause (93b vs. b') (Haegeman and Guéron 1999: 369).

(93) a. John likes **Mary's**$_i$ stories about **herself**$_i$.
b. **John**$_i$ considers the stories about **himself**$_i$ foolish.
b'. **John**$_i$ thinks that the stories about **himself**$_i$ are foolish.

According to the definition of binding domain as governing category, we would expect an asymmetry between (93b) and (93b') because the NP *the stories about himself* is governed by the matrix verb only in (93b), and so the binding domain should be extended to the main clause only in this sentence — contrary to fact. Generative grammar has tackled this new problem by a further elaboration of the notion 'binding domain': an anaphor must be bound within a so-called 'complete functional complex' (CFC), which contains the anaphor, its governor and an accessible SUBJECT[58], i.e. a potential binder for the anaphor (Graffi 1988: 403-5; Grewendorf 2002: 27; Johnson 1987: 354-5; Martin 2002: 142). In informal terms, the reflexive in (93b') can be bound by the subject of the main clause because there is no accessible SUBJECT for it within the subordinate *that*-clause. Not even this sophisticated definition of binding domain as a CFC will do, however. In (94a), the reflexive is part of an NP within a

[58] Since the notion of 'accessible SUBJECT' includes both clausal subjects and arguments realised by an *'s*-genitive within an NP (e.g. *John's pictures of himself*), the term is capitalised in this special use.

that-clause, and it is bound by the main-clause subject although there is an accessible SUBJECT within the subordinate clause. Similarly, in (94b-b"), the reflexive is bound by the main-clause subject although the NP_2-position contains a potential binder.

(94) a. **Mike**$_i$ will not believe that **this**$*_i$ is a photograph of **himself**$_i$. (ROS: 30) (from Postal 1974: 64)

b. **John**$_i$ considered **Catherine**$*_i$ an equal to **himself**$_i$. (ROS: 20) (from Napoli 1989: 308)

b'. **I**$_i$ regard **them**$*_i$ as more liberal than **myself**$_i$. (ROS: 10) (from Postal 1974: 66)

b". **The mystic**$_i$ surrenders his will to some being or idea **which**$*_i$ he considers superior to **himself**$_i$ (BNC CEE: 1048).

The model of structural binding relations has proved very robust in the generative literature, but it is ill-equipped to handle such sentences.[59] From a semantic perspective, the binding facts in (94b-b") are not really surprising: although the putative SCs all contain potential binders, these phrases would be semantically odd as antecedents for the respective anaphors; as a consequence, the reflexives can be bound by the semantically compatible main-clause subjects.

Another case in point is an example I found in the corpus which is amenable to neither a structural nor a semantic solution, but requires a pragmatic explanation. The reflexive *myself* in (95a) cannot be bound by the NP_2 *the stranger*; nor does it relate to the main-clause subject *he*, however. Instead, it must be referred to the speaker of the sentence that can be inferred pragmatically. Similarly, in (95b) the reflexive does not refer to the real George W. Bush in the subject position, but to a character that impersonates the president in a comic strip.

(95) a. In fact, **he**$*_i$ would probably come to regard **the stranger**$*_i$ as **myself**$_i$ (BNC FTV: 888).

b. **George W. Bush**$*_i$ did not find **himself**$_i$ funny in the comic strip.

The issue about the correct definition of binding domains is far from settled, but it has become clear from the preceding discussion that purely structural accounts will not do. Until

[59] There are other cases as well that pose problems to structural binding conditions. The question *Which pictures of himself*$_i$ *does John*$_i$ *consider foolish*? violates the c-command relation because here the reflexive c-commands its antecedent instead of the other way round. In order to obtain an orthodox c-command relationship, the process of 'reconstruction' is sometimes invoked, which can restore the moved constituent *which pictures of himself* to its D-structure position after *consider*. Reconstruction operates at LF and does not have any overt reflexes, yet it guarantees that *John* c-commands the anaphor at least at the level of LF (Haegeman and Guéron 1999: 553). Although Haegeman and Guéron affirm that reconstruction is "not simply a technical trick" (1999: 533), I cannot see it as anything else because its main motivation is to save the structural c-command condition. Since the MP has done away with separate levels of representation, the Binding Theory in this framework only requires that the relevant binding configurations are fulfilled at any point during the derivation (Grewendorf 2002: 114); this means, however, that binding relations become much more difficult to test empirically. Be that as it may, there are cases that cannot be handled by either mechanism: in *As for himself, John considers Rome the most beautiful city* (Napoli 1989: 299), the phrase *as for himself* cannot reasonably be claimed to have been moved from a position structurally lower than *John* at any point in the derivation. The c-command requirement on binding therefore does not seem to be empirically correct (Napoli 1989: 299).

recently, semantic and pragmatic factors have received relatively little attention in binding accounts, but their important role is currently under investigation (Jackendoff 2002: 388-9; Langacker 1999b: 51; Sweetser and Fauconnier 1996: 6). This is not the place to provide an alternative account of binding relations; the important upshot of our discussion is that binding facts cannot be used to identify the NP_2 position as a structural subject.

(d) ***Floating emphatic reflexives***

In his monograph on SCs, Aarts (1992: 47) takes up a test used by Napoli (1989: 319-20) to prove that the postverbal NP is syntactically a subject. The test works with so-called 'floating emphatic reflexives', which can allegedly only be related to a subject (96a), but cannot be bound by an antecedent in object position (96b) (Aarts 1992: 46).

(96) a. **The president**$_i$ is coming **himself**$_i$! (from Napoli 1989: 319; my emphasis)
b. *We put **the president**$_i$ in our car **himself**$_i$. (from Napoli 1989: 319; my emphasis)

Aarts then constructs a sentence in order to show that the reflexive can be related to the postverbal NP of *consider*-type verbs, which will consequently have to be interpreted as the subject of a clause:

(97) I thought [**the prime-minister**$_i$ **herself**$_i$ a controversial person]. (from Aarts 1992: 47)

Yet (97) is not pertinent to the point Aarts wants to make. The sentence contains an emphatic reflexive, but this reflexive is not in a floating position. Non-floating emphatic reflexives immediately follow the nominal they are bound by, whatever grammatical function this NP has (cf. Biber *et al.* 1999: 344). As a result, it is not very difficult to find a counter-example in which the emphatic reflexive does not relate to the subject, but to the direct object:

(98) It was Brian Friel's aim to reproduce **Irish life**$_i$ **itself**$_i$ in his plays.

Napoli, on the other hand, provides a true illustration of a floating emphatic reflexive which refers to the postverbal NP of *consider*:

(99) I consider [**the president**$_i$ entirely responsible **himself**$_i$].
(from Napoli 1989: 319; my emphasis)

As with the binding evidence in the preceding section, it is doubtful that the emphatic reflexive is sensitive to the subjecthood of its antecedent rather than to the semantic compatibility of the phrase in NP_2-position. As the following sentence illustrates, the floating emphatic reflexive can also refer to the subject of the matrix verb if the NP_2-position is not available for semantic reasons:

(100) **I**$_i$ consider **the prime minster**$*_i$ responsible **myself**$_i$.

It could objected at this juncture that the string *the prime minister responsible* does form an SC and that the reflexive *myself* is outside the SC (101a). In fact, the sentence becomes ungrammatical when the emphatic reflexive intervenes between NP_2 and XP (101b).

(101) a. I consider [$_{SC}$ the prime minister responsible] **myself**.
b. *I consider [$_{SC}$ the prime minister **myself** responsible]. (ROS: 94)

I do not think, however, that the ungrammaticality of (101b) is due to the fact that the accessible subject *the prime minister* intervenes between the floating emphatic reflexive and the main-clause subject *I*. Rather, floating emphatic reflexives are, by definition, stressed pronouns and constitute the information focus within the sentence. In English, the informationally salient part of a sentence occupies the clause-final position, so the placement of the less salient XP *responsible* after the emphatic reflexive is in violation of this information principle. The following pair of sentences, where no other potential binder intervenes between the reflexive and its antecedent, is supportive of this conclusion: most of my informants have preferred (102b) to (102a) in evaluation tests.

(102) a. ?The prime minister is responsible **himself** for the slump.
b. The prime minister is responsible for the slump **himself**.

I do not have an explanation, however, why a floating emphatic reflexive cannot refer to the postverbal NP in a sentence such as (96b), but I doubt that a purely structural account can provide a satisfying answer.

(e) ***Extraction evidence***

The different extraction possibilities of complex subject and object NPs have intrigued Chomsky from a very early point on (1972: 19-21), and have been brought back into play by SC-proponents in an attempt to substantiate the subjecthood of the NP_2-position. Chomsky and his followers claim that an NP included in a complex noun phrase cannot be extracted from such a noun phrase if it occupies the subject position (103a), but that extraction is possible from the object position (103b) (Basilico 2003: 5; Chomsky 1972: 20-1).

(103) a. ***Who**$_i$ did [a picture of **t**$_i$] anger you? (from Basilico 2003: 5; my emphasis)
b. **Who**$_i$ did you see [a picture of **t**$_i$]? (from Basilico 2003: 5; my emphasis)

The reasons given for this asymmetry are rather theoretical and need not detain us here (see Basilico 2003: 6; Kayne 1984: 167-9, 1985: 102-3). It is argued by SC-theoreticians that since the extraction of a subpart of the postverbal NP of *consider* yields a violation, this must be a subject position (Aarts 1992: 47; Basilico 2003: 5; Hoekstra 1988: 107; 1992: 147; Kayne 1984: 169; Stowell 1991a: 191):

(104) ***Who**$_i$ do you consider the sister of **t**$_i$ very smart? (ROS: 86)

(104) is clearly ungrammatical and has almost unanimously been rejected in native speaker tests. The problem is, however, that the degree of acceptability is not much higher for most extractions out of object positions either. While (105a) has been evaluated as doubtful but still acceptable, (105b) has been discarded even more clearly than (104).

(105) a. ?**Who**$_i$ did you meet the sister of **t**$_i$? (ROS: 50)
b. ***Who**$_i$ did you tell the sister of **t**$_i$ stories? (ROS: 99)

Extraction possibilities are not only subject to widespread idiolectal variation, but seem to depend on more complex factors than a simple dichotomy between subject and object position. The following two sentences (106a, b), which have been slightly adapted from Hoekstra (1988: 107), have received very similar ROS values; Hoekstra, however, avers that the first one is "ungrammatical" because there has been extraction from a putative SC-subject position, while the second one "does not give any problems" because it shows extraction from an object position (1988: 107). Theoretical expectations seem to have overridden sound empirical judgements here.

(106) a. ?**The movie**$_i$, which I found the complaints about **t**$_i$ ridiculous, was very interesting. (ROS: 38)
b. ?**The movie**$_i$, which I found the announcement about **t**$_i$ in yesterday's paper, is very successful. (ROS: 31)

Speaker judgements aside, there is even some uncertainty about the value of extraction evidence as a subject diagnostic within generative grammar (see Stowell 1991a: 192-3). For independent theoretical reasons, Stowell claims that the extraction data may turn out to be "theory neutral for the SC controversy" (1991a: 194). The facts of (105) and (106), in any case, demand a healthy scepticism towards the extraction test.

Like the constituency tests provided by SC-proponents, the subject tests are not substantial enough to advance the cause of the SC-hypothesis. As our discussion has shown, it is a rather rash policy to accommodate syntactic data to one's own purposes unless that data has been thoroughly investigated. What Postal observed 30 years ago still obtains today; Postal emphasised the importance of realising

> the great difficulty involved in validating empirical arguments for grammatical proposals, the great care that must be taken in reaching conclusions, and the always existing possibility that independent, unconsidered factors can always render an apparently clear argument untenable. (Postal 1974: 118)

But even if the subject tests discussed above could have been corroborated, SC-proponents are again faced with distributional mismatches because NP_2 also has some typical direct-object properties. The main direct-object characteristics of this phrase have already been mentioned in conjunction with the complex-transitive complementation analysis (4.1.2): NP_2 must be

adjacent to the matrix verb and must not be separated from the verb by an adverbial (107a), it is assigned accusative Case by the main verb (107b), it corresponds to the main-clause subject in a passive paraphrase (107c), and it must be turned into a reflexive pronoun if it is co-referential with the main-clause subject (107d). All of these characteristics are absent from the subject of a *that*-clause, as the primed sentences illustrate:

(107) a. *I **consider** very strongly **the waitress** innocent.
a'. I **believe** very strongly that **the waitress** is innocent.
b. I consider **her** innocent.
b'. I believe that **she** is innocent.
c. **The waitress** is considered innocent.
c'. ***The waitress** is believed (that) is innocent.
d. The waitress considers **herself** innocent.
d'. *The waitress thinks that **herself** is innocent.

As with the non-constituency evidence, there is no way out of this impasse for SC-theoreticians than to either dismiss such conflicting data as insignificant or to explain them away by driving the machinery of formal grammar (see 5.3), both of which are opportunistic escape hatches.

As a construction grammarian, I do not want to weigh the pros and cons of a subject vs. direct-object analysis because I think that the overall procedure to explain the syntactic nature of elements in one construction on the template of their behaviour in related constructions is exceedingly slippery — the behaviour of NP_2 and XP in COORDINATION Constructions, CLEFT Constructions or PASSIVE Constructions, for instance, is determined by the special properties of these constructions and cannot be used to explain the nature of these phrases in the secondary-predicate constructions illustrated under (3) in the introduction. Moreover, I think that many grammatical constructs, including the ones under investigation here, lie at the borderline of divisions such as 'subject' vs. 'direct object' and consequently do not lend themselves very well to a discrete treatment. With respect to the question whether SCs form constituents, I would clearly argue that they do not because the tests provided by SC-theoreticians have not been able to reveal any additional structure between NP_2 and XP, so the null-hypothesis would be that they do not form a construction of their own.

Most SC-proponents do not see such distributional mismatches as an insuperable obstacle to their theory, though, and have an undeterred go at the syntactic description of SCs. The discussion about the SC-node is included in the following chapter not only because it illustrates how distributional mismatches can opportunistically be resolved on different representational levels, but also because it shows that it has not been possible to reasonably integrate SCs into the framework of generative grammar in the last two decades without considerably changing this framework itself.

5.3 Attempts to identify a black hole: what is the categorial status of small clauses?

5.3.1 Some preliminaries: the categorial component of generative grammar

Although SC-theoreticians have lamentably failed to provide empirical evidence for the constituency of the NP_2 XP-string and the subjecthood of NP_2, they have nevertheless attempted to naturalise the SC-analysis within the theoretical framework of generative grammar. Since SCs tie in perfectly with other generative principles such as the Theta-Criterion, the Projection Principle and the binary-branching requirement (cf. 5.1), SC-proponents have redoubled their efforts to prove the existence of SCs from a theoretical stance at least. As has been pointed out in 3.2, the postulation of different representational levels and various subtheories gives grammarians a rather useful loophole in order to come to terms with distributional mismatches. In a multi-stratal framework, the constituency of SCs could also be established if it were possible to identify a node that exhaustively dominates NP_2 and XP at D-structure and if the non-constituency behaviour of this string could be claimed to be an S-structure reflex occasioned by independent principles of grammar; similarly, the subjecthood of NP_2 may be demonstrated if this phrase clearly occupied the subject position of a clausal entity at D-structure and if its direct-object properties could be coherently attributed to other premises of the grammatical system. As the various proposals that have been advanced along these lines in the past two decades draw extensively on theoretical notions of GB-theory (and, more recently, the MP), some common principles of the categorial component of generative grammar and Case theory must be laid out at this point.

The categorial component integrates the lexicon with the syntax via certain structural rules and principles. In the versions of generative grammar preceding GB-theory, the categorial component was essentially made up of a rich set of category-specific rewrite rules defining the constituent structure of each phrasal category, e.g. S $\rightarrow$ NP VP, or PP $\rightarrow$ P NP (Hoekstra 1988: 102-3; Stowell 1983: 288). While the device of rewrite rules may have been well suited to the task of constructing descriptively adequate phrase-structure configurations for a specific language such as English, it lacked explanatory adequacy because the rules had idiosyncratic properties and could not be deduced from more general principles of grammar (cf. 3.2) (Cook and Newson 1996: 135; Grewendorf 2002: 12). The 1970s and 1980s therefore saw systematic attempts to reduce the redundancy of individual phrase-structure rules and to accommodate them to some more abstract principles within the new framework of X'-theory. Category labels such as 'NP' or 'VP' used to be essentially unanalysed symbols, with no sys-

tematic relations holding between V and VP or N and NP. X'-theory, on the other hand, hypothesises that the label of each phrase consists of a "categorial value" such as N and V, which identifies the lexical nature of the phrase, and a "hierarchical value" represented by the respective bar-level (or, today, number of primes), e.g. V' or V" (Stowell 1991b: 40). The important generalisation of this system is that each complex syntactic entity has the same categorial value as its lexical head, irrespective of its hierarchical level, i.e. "$X^n \rightarrow ... X^{n-1} ...$" (Grewendorf 2002: 33). Heads are zero-level categories belonging to a particular lexical class (e.g. V^0 or N^0); the categories of the first bar-level are so-called intermediate projections of their heads (e.g. V' or N'), and the categories of the second and highest bar-level are maximal projections or phrases (e.g. V"/VP or N"/NP) (Cook and Newson 1996: 139). The principle of endocentricity thus guarantees that the features of the head progressively project up onto the maximal projection.

While the maxim of endocentricity makes the relations between a lexical head such as N and its projections N' and NP explicit, it does not, as such, capture the structural parallels between phrases of different categories. X'-theory remedied this situation as well because it provided a uniform rule schema into which all phrasal categories could be collapsed (Starke 1995: 237-8; Stowell 1983: 288-9). The structural skeleton of (108) is a category-neutral template, where the value of X can range over the lexical categories N, V, A and P. This template allows for no X-particular variation and thus guarantees that the syntactic levels X' and XP are projected from their heads in a uniform way, irrespective of what lexical categories these heads are instantiated by.[60]

(108) a. X' $\rightarrow X^0 + YP$
b. XP $\rightarrow$ SPEC + X'
c. XP* $\rightarrow$ XP + ZP

All projections are reduced to binary branching: the intermediate projection X' dominates the lexical head and at most one complement YP (108a), while the maximal projection XP consists of a so-called 'specifier' (SPEC) and the X'-projection (108b) (Cook and Newson 1996: 141-4; Stowell 1991b: 40). A specifier is defined in terms of its particular syntactic position; its exact categorial values, however, are notoriously vague and subject to continuing debate (Sternefeld 1991: 17-8; Stowell 1991b: 42).[61] Maximal projections can be recursively combined with ad-

[60] In the MP, this strict algorithm has been replaced by the simple recursive operation 'merge', which combines two elements in a piecemeal fashion (Cook and Newson 1996: 323). The advantage of 'merge' is that certain (complement or specifier) positions which the X'-format would have required but which are not lexically filled in the sentence need not be projected (Chomsky 1995: 249). The principle of endocentricity remains unaffected, though: one of the two elements merged provides the label for the whole structure (Cook and Newson 1996: 339-40).

[61] A notational device for expressing the notion 'specifier of XP' is [SPEC,XP].

junct ZPs — without increasing the hierarchical value of XP, though (108c)[62] (Haegeman and Guéron 1999: 80); alternatively, adjuncts are also sometimes analysed as sisters to X', recursively creating other X'-levels (Cook and Newson 1996: 145-6).

The blueprint of (108) has been extended from lexical to functional categories such as determiners, temporal inflections, and complementisers as well (Bresnan 2001: 99-100; Haegeman and Guéron 1999: 103). While a sentence was originally analysed as an exocentric structure (S → NP VP), it is now thought to be a hierarchically structured projection of the verbal inflection, abbreviated as 'I' (Cook and Newson 1996: 148). The head I determines whether a clause is finite ([+tense]) or non-finite ([-tense]), and what its person/number agreement-features ([AGR]) are.[63] I takes a VP as its complement to form an I' projection, which in turn combines with a specifier — in this case the subject of the sentence (but see 5.3.5) — to form the maximal projection IP (109a, a') (Haegeman and Guéron 1999: 95; Stowell 1991b: 41). Similarly, a clause introduced by a complementiser (C) such as *that*, *for* or *if* is no longer conceived of as an exocentric construct (S' → C + S), but as a projection of this complementiser. The head C selects a clause, IP, as its complement and forms a C'-projection; C' then combines with a specifier to result in the maximal projection CP (109b, b') (Cook and Newson 1996: 150-1; Stowell 1991b: 41).[64]

(109) a. I' → I + VP
a'. IP → SPEC + I
b. C' → C + IP
b'. CP → SPEC + C'

The extension of the X'-template to functional categories is first and foremost based on theoretical reasons; the postulate that I selects VP or that C selects IP, for example, does not follow from empirical considerations, but is primarily "a matter of analytical convenience" (Stowell 1991b: 42). The developments of the categorial component thus clearly illustrate the continuing drive in generative grammar from descriptively adequate analyses to abstract, explanatorily adequate accounts.

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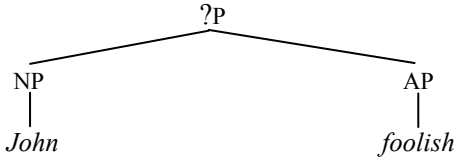
[62] A maximal projection without adjuncts is called the 'minimal maximal projection'; this projection can then be recursively extended by adjuncts, creating various 'segments' of a phrase (Haegeman and Guéron 1999: 80).

[63] The tense and agreement features of I can be represented by a free morpheme such as *is* or by a bound morpheme such as *–s*. In the course of the derivation, a bound morpheme must be combined with its lexical stem by some mechanism that raises the verb to the bound morpheme (Haegeman and Guéron 1999: 90-2). In the more recent 'checking account', verbs are base-generated under the head V complete with their inflectional endings. The functional head I does not contain tense or agreement morphemes, but only abstract tense/agreement features. These abstract features must be checked by a verb with matching inflections; for this checking procedure, the verb must (overtly or covertly) move to the functional head I (Grewendorf 2002: 39-40).

[64] The position of C can also be empty and serve, for example, as the landing site of auxiliaries in root interrogatives (***Will*** [C] *he come tomorrow*?). Likewise, [SPEC,CP] is frequently unfilled, but may function as the structural position for interrogative pronouns in *wh*-questions (e.g. ***When*** [SPEC,CP] *will* [C] *he come tomorrow*?) (Haegeman and Guéron 1999: 170-2).

GB-theory defines SCs as clausal complements of verbs like *consider*; since complement positions are occupied by maximal projections such as NPs (*I believe* ***the story***) or CPs (*I believe* ***that the story is true***) (Cook and Newson 1996: 141; Moro 1995: 113), the propositional θ-role of SCs must be syntactically realised by a maximal projection as well. According to the principle of endocentricity underlying X'-theory, SCs must thus be projected by some head.[65] The problem now is to specify what head projects an SC as in *Mary considers* [$_{SC}$ ***John foolish***] (cf. 110) — is it some sort of lexical projection (e.g. an AP), or a functional projection (e.g. an IP or a CP)?

(110)



Any proposal concerning the categorial status of the SC-node must also account for the fact that the SC-subject does not show characteristic subject properties; in particular, it must explain why this phrase can act as a separate constituent at S-structure and has the accusative Case typical of direct objects (cf. 5.2). Case-relations are explicated within the GB-module of 'Case theory', the cornerstone of which is the requirement that all overt NPs must be assigned Case (Haegeman and Guéron 1999: 133; Stowell 1983: 286).[66] In the standard account, nominative and accusative Case are assigned by governors such as P or V under specific S-structural configurations (Grewendorf 2002: 23). A head can assign structural Case to an NP if it bears one of two possible local relations to it: a head governs its complement and can Case-mark it under this relation of government; furthermore, a head is in an agreement relation with the specifier of its maximal projection and can assign Case to the NP in the specifier position under this relation of SPEC-head agreement (Haegeman and Guéron 1999: 79). More explicitly, a verb assigns accusative Case to its direct-object complement and I assigns nominative Case to the subject in the [SPEC,IP] position (Haegeman and Guéron 1999: 129-30). It is, however, assumed that only finite I (marked [+AGR]) has the ability to assign nominative Case on the strength of the agreement relation holding between it and the subject NP (Haege-

[65] Despite the wide-spread acceptance of the endocentricity principle, there have been occasional attempts to treat SCs as exocentric structures (e.g. Chung and McCloskey 1987; Hayashi 1991: 23; Kluender 1985). Chung and McCloskey, for instance, argue that an SC is of the category 'S' because "it shows all the characteristic traits of maximal categories but is not a projection of any category" (1987: 234-5); Kluender likewise identifies SCs as Ss and wants to exempt S from the principle of endocentricity (1985: 287-8). Exocentric analyses of SCs have come in for heavy criticism because they violate the generalizations of X'-theory (Aarts 1992: 178-9) and treat 'SC' as a primitive, unexplained notion (Radford 1988: 516).

[66] The Case requirement for overt NPs is often explained by the fact that Case renders an NP visible for the assignment of a θ-role (Haegeman and Guéron 1999: 502). As a consequence, a direct relation between Theta-theory and Case-theory can be established if it is assumed that "Cases are to syntax what theta-roles are to the lexicon" (Brody and Manzini 1988: 117-8).

man and Guéron 1999: 95; Stowell 1983: 286). Non-finite I (marked [-AGR]), on the other hand, cannot establish an agreement relation with [SPEC,IP] and thus cannot Case-mark the subject at all (Haegeman and Guéron 1999: 132; Stowell 1983: 290-1). In more recent developments of Case theory, where the concept of government has been abolished (Cook and Newson 1996: 316), it is assumed that both nominative and accusative Case are assigned under SPEC-head agreement relations; a direct object must thus be moved to the specifier position of some functional head to receive accusative Case (Grewendorf 2002: 39).[67]

The accusative Case of the putative SC-subject can thus be explained in two ways: if accusative Case is assumed to be assigned under government, as the traditional theory has it, the SC-subject must be exceptionally governed and Case-marked by the matrix verb (Rothstein 1992: 136; Stowell 1991a: 187-8). SC-theories working on this assumption must explain why such Exceptional Case Marking (ECM) is possible, i.e. why and how a matrix verb can govern an NP it has not semantically selected across a clause boundary. Alternatively, if it is hypothesised along the lines of more recent assumptions that the SC-subject moves to the specifier position of some functional head to receive accusative Case (Cook and Newson 1996: 334), it must be pointed out where exactly the landing site of this NP is and how it can move there.[68] In addition to these questions, both Case accounts must explain why the SC-subject can separately move into the matrix clause, e.g. in the passive transformation (***He***$_i$ *is considered* [$_{SC}$ ***t***$_i$ *a fool*]), although it is only a subconstituent of a clause.

In the following sections, we will look at various attempts to identify the SC-node and to explain the accusative Case of the putative SC-subject in the chronological order of their appearance in the SC-literature.

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[67] In the current 'checking account', a head is not regarded as assigning Case to some NP, but to check an NP that has been inserted into the structure along with its Case feature (Grewendorf 2002: 159-60; Haegeman and Guéron 1999: 129). The checking account works with the notion of 'uninterpretable' features: Case is seen as an uninterpretable feature that does not have any meaning in the semantic interpretation of the sentence; a Case-bearing NP must therefore move to the specifier position of some functional head to have its Case feature checked and subsequently deleted; this movement is overt for the subject (which checks for nominative Case), but covert for the object (which checks for accusative Case) in English (Cook and Newson 1996: 333-5; Grewendorf 2002: 162-3, 189-90). As I am not interested in clearly differentiating between alternative theories of Case in GB or the MP, I will use the terminology of the Case assignment account and the checking account indiscriminately in the following discussions.

[68] If an NP moves from its theta-position at D-structure to some Case position at S-structure, it leaves behind a co-indexed trace; the moved NP and its trace are said to form a chain (Haegeman and Guéron 1999: 396). The notion 'chain' ensures that both the Theta-Criterion and the Case requirement are satisfied because the NP is in a Case position in this chain and the co-indexed trace occupies a theta-position (Haegeman and Guéron 1999: 506). NP-movement is 'A(rgument)-movement' (Haegeman and Guéron 1999: 217-8): an NP moves from its base-structure argument position to another argument position (Cook and Newson 1996: 178; Grewendorf 2002: 19). The idea of A-positions is important to guarantee that such an NP does not move to a position that cannot be assigned a thematic role (so-called A'-positions), such as the [SPEC,CP] position, which serves as the landing site for *wh*-phrases in questions (Cook and Newson 1996: 314; Haegeman and Guéron 1999: 218).

5.3.2 Small clauses as quasi-clauses: is an SC a pure lexical projection?

Stowell, who has laid the groundwork for modern SC-theory, did not analyse NP_2 XP-strings on a par with non-finite and finite clauses; specifically, he assumed that SCs do not contain any functional projections such as I or C. Instead, he proposed that an SC is simply a maximal projection of the lexical category of its predicate (1983: 301); the inner architecture of an SC would then look something like (111a). When an SCs is a bare lexical projection (LP), it can be, among other things, an NP (111b) or AP (111c):

(111) a. **[**$_{LP = SC}$ SC-subj [$_{L'}$ [$_{L}^{0}$ SC-pred]]**]**.
b. Mary considers **[**$_{NP = SC}$ John [$_{N'}$ [$_{N}^{0}$ a fool]]**]**.
c. Mary considers **[**$_{AP = SC}$ John [$_{A'}$ [$_{A}^{0}$ foolish]]**]**.[69]

Stowell and the scholars drawing on his LP-analysis (which include Chomsky (1981), Contreras (1987), Kayne (1985), and Manzini (1989)) furnish several pieces of evidence to substantiate the configuration of (111a). In the first place, Stowell asserts that the matrix verb can select for the categorial status of the SC-predicate (1983: 301). To corroborate this hypothesis, he makes up the following ungrammatical sentences:

(112) a. *I consider [John **off my ship**].
b. *I expect [that man **very stupid**]. (from Stowell 1983: 301)

Stowell attributes the ungrammaticality of these sentences to the categorial constraints that *consider* cannot subcategorise for a PP and *expect* not for an AP. As these verbs are able to specify the categorial status of XP, Stowell concludes that SCs must be projections of the lexical head X. If they were sentences, the matrix verb would categorially select a subconstituent of its sentential argument, something which is strictly disallowed by the rules of subcategorisation (Stowell 1981: 259, 1983: 301). These selection data therefore seem to underpin Stowell's claim that a matrix verb such as *consider* subcategorises for one postverbal argument, which may be an NP or AP; an SC is therefore nothing more than a maximal projection of a lexical category which is preceded by a subject NP within the same phrase.

One more assumption is necessary to make the analysis of (111) sustainable, though. Stowell needs to postulate that not just IPs, but all maximal projections may contain a structural subject (1983: 295-6) — a generalisation not usually included in the X'-framework of the time. As the only structural position made available by X'-theory for this sort of subject is the specifier of the respective maximal projection, the notion 'subject' would generalise across categories and be synonymous with the template '[SPEC,XP]'. N' or A' would thus combine with

[69] The intermediate projections N' or A' are identical to their heads N^0 and A^0 in these sentences, but some nouns and adjectives can also take complements in the SC-predicate position: *I consider John an obstacle **to our plans***; *I consider John too proud **of his achievements***.

their specifiers a.k.a. subjects to form the maximal projections NP (111b) and AP (111c), respectively.[70]

As a result, the propositional θ-role assigned by matrix verbs such as *consider* can be structurally realised not only by ordinary clauses, but also by quasi-clauses such as the LPs postulated by Stowell (1981: 259-61). The subject/predicate relation between NP_2 and XP is not structurally reflected by a canonical clause, which would also contain a functional projection for tense or a complementiser, but by the subject/predicate configuration holding between the specifier and the lexical head within a single maximal projection (Nakajima 1991a: 5; Staudinger 1996: 29; Stowell 1983: 298-9). In this view, SCs constitute structural and semantic predication domains like full clauses (Ionescu 1997: 168; Stowell 1991a: 183, 1995: 274). While the latter are the CSRs (cf. footnote 41) of the propositional θ-role, SCs would be marked structural realisations because they contain a subject and a predicate position but not any other typical clausal characteristics (Chomsky 1981: 112; Kaplan 1988: 81).

The subject in the specifier position of an SC is θ-marked by the lexical head of the SC, but is thought not to be governed or assigned Case by it (Stowell 1983: 297). The NP_2 therefore needs Case from the matrix verb outside the SC (Ionescu 1997: 169; Stowell 1991a: 182). The SC-boundary must consequently be taken to be transparent to government so that the SC-subject can be exceptionally Case-marked by the matrix verb.[71] The movement of the NP_2 in passive sentences (***John***$_i$ *is considered* [***t***$_i$ *foolish*]) is also attributed to Case theory because passive verbs are assumed not to assign accusative Case, so the SC-subject must move to the matrix subject position where it can receive nominative Case from finite I (Stowell 1991a: 182). The mechanism of ECM thus explains both the S-structure direct-object properties of NP_2 and the non-constituent behaviour of the NP_2 XP-string in passive constructions, for instance.

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[70] Stowell's argumentation for the category-neutral definition of the subject position relies heavily on Case theory. While the subject position of finite IPs, i.e. ordinary clauses, must be obligatorily filled by an NP, the subject of lexical projections such as NP and AP is optional (1983: 289-90). Stowell theorises that this "defective cross-categorial distribution of lexical subjects" (1983: 290) can be attributed to Case: finite I can assign nominative Case to the clausal subject, but lexical categories such as N and A are unable to assign Case and therefore usually do not have their subject positions filled by an NP (1983: 292).

[71] The theory of Case then prevalent demanded that a matrix verb can only govern into a non-maximal projection, so it had to be argued that SCs are non-maximal projections of their predicates (Chomsky 1981: 107, 169). The usual approach to the related problem of how the subjects of infinitival clauses like *I believe* [***him*** *to be a liar*] can be assigned accusative Case was to suggest "a marked rule of S'-deletion" (1981: 66), which deletes S' (today: the CP-projection) so that the remaining configuration was no longer a maximal projection (S or IP was assumed to be non-maximal at that time) (Stowell 1983: 296-7; Watts 1983: 47). In a similar way, the LP-projection of SCs could be exceptionally deleted so that the matrix verb can govern the subject of the non-maximal projection L' (Staudinger 1996: 148). For several reasons, however, the rule of S'-deletion or LP-deletion has always been "a fudge which sems a little uncomfortable" (May 1987: 27). The post-*Barriers* framework (Chomsky 1986b) offered a new solution to the problem (see 5.2.4).

Stowell's analysis of SCs as maximal projections of their lexical heads has come under heavy attack from generative grammarians since the late 1980s; as Hornstein and Lightfoot put it, "Stowell commits himself to some complications which range from unnecessary to unacceptable" (1987: 32). To begin with, Stowell's assumption that the matrix verb is sensitive to the categorial status of the predicate is highly problematic. Kitagawa shows that the reason for the ungrammaticality of (112a) and (112b) does not lie in some categorial restrictions that *consider* and *expect* impose on their complements. Rather, the unacceptability of these sentences is induced by the semantics of the matrix verbs: *consider* needs a complement expressing "state of affairs" and *expect* a complement expressing "change of state" (Kitagawa 1985: 211-2). If these restrictions are met, *consider* can occur with a PP (113a) and *expect* with an AP (113b):

(113) a. Unfortunately, our pilot considers [that island **off the route**].
b. I expect [that man **dead** by tomorrow]. (from Kitagawa 1985: 212)

I agree with Kitagawa that the grammaticality of the sentences is determined by semantic considerations, and not by the categorial realisation of the XP-position. It is at this point that we part company, though: Kitagawa argues that the matrix verb subcategorises for the SC as a whole and not merely for the category of its predicate (1985: 212; see also Hornstein and Lightfoot 1987: 32-3). From the perspective of Construction grammar, I submit that the static interpretation of the XP-role in (113a) is part of the meaning of the QUALIFYING Construction instantiated by this sentence as a whole, while the dynamic interpretation of (113b) is due to the meaning of prospective constructions (see 9.2.3 and 11.4.3.2).[72] Whatever position one takes, it is clear that Stowell's assumptions are untenable.

The structural analysis of SCs as maximal projections of lexical categories, with the SC-subject occupying the [SPEC,LP]-position, does not fare much better than the selection argument. What militates against the configuration of (111) is the fact that the putative L'-predicate behaves like a maximal projection because it can undergo movement operations without its specifier (114a) (Kitagawa 1985: 213; Williams 1983: 297-8); non-maximal projections, i.e. subparts of syntactic phrases, cannot normally be moved on their own, however (114a'). The problems of the specifier-analysis are also aggravated by the fact that the SC-predicate can have two subjects and consequently two specifier positions (114b) (Radford 1988: 517; Wil-

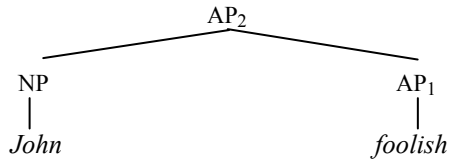
[72] Contreras defends Stowell's categorial selection account against Kitagawa's criticism by constructing the sentence **I expect you an attorney by the end of the year*, which is ungrammatical even though it has a dynamic meaning (1987: 230; see also Endo 1991: 62-3). The ungrammaticality of this sentence seems, however, to be due to the fact that *attorney* is not a noun that can be used predicatively (cf. **I consider you an attorney*) (see 11.4.6.2).

liams 1983: 297-8), something that is prohibited for other maximal projections (114b') (for additional non-constituency evidence, cf. 5.2.1).

(114) a. **How foolish**$_i$ does Mary consider **[**$_{AP}$ John [$_{A'}$ **t**$_i$**]]**?
a'. ***Who**$_i$ do you love **[**$_{NP}$ John's [$_{N'}$ **t**$_i$**]]**? (e.g., *t*=brother)
b. Mary considers **[**$_{NP}$ **John** [$_{NP}$ **Mary's** [$_{N'}$ lover]]**]**.
b'. *Mary loves **[**$_{NP}$ **John's** [$_{NP}$ **Bob's** [$_{N'}$ brother]]**]**.

In the face of such serious objections, proponents of the lexical theory of SCs have suggested a cop-out: if both the SC-subject and the SC-predicate are maximal projections, i.e. independent constituents, NP_2 could be argued to occupy a base-generated position as an adjunct to XP (Chomsky 1986b: 16; Manzini 1989: 158), a solution that has more recently been revisited by Sternefeld (1991: 28) and Haegeman and Guéron (1999: 110). In this configuration, the SC-subject is not in the specifier position of the maximal projection, but the two maximal projections NP_2 and XP are simply juxtaposed, with the categorial features of the minimal maximal projection XP_1 (cf. footnote 62) projecting up to the full maximal projection XP_2 (Manzini 1989: 159):

(115)



I cannot comprehend the relative popularity of this adjunction analysis, whose faulty logic can easily be attacked. We would have to assume, in the first place, that the SC-subject is an obligatory adjunct because the sentence **Mary considers foolish* is ungrammatical; for most syntacticians, 'obligatory adjunct' is a contradiction in terms, though. Moreover, adjunction operations are typically recursive, but can only apply once in (115) (cf. **Mary considers **John Bob** foolish*) (Radford 1988: 519). Structure (115), like (111a), is also problematic because no matter if NP_2 is in the specifier position of the SC-predicate or adjoined to it, there is no representational space for the conjunction/preposition *as* in constructions like *John **regards Mary as a genius*** (Starke 1995: 240-1). The adjunction analysis is a theoretical contrivance that attempts to salvage the LP-analysis of SCs without having any factual basis to speak of.

The most serious objection to Stowell's proposal concerns the analysis of phrasal subject/predicate configurations as quasi-clauses. If every phrasal subject/predicate relation constituted some sort of clause, NPs such as "*Al's gift to the hospital of $3000*" or "*Bill's pictures of himself*" would have to be analysed as clauses as well, which would stretch the notion 'clause' to an unacceptable degree, however (Kaplan 1988: 81). Furthermore, the analysis of (111) forces grammarians to treat not only adjectives, but NPs as predicates as well, which calls for a re-evaluation of the notion 'predicate'. Stowell and his followers have tried to cope

with the definition of 'predicate' within the framework of generative grammar. Noun phrases were originally analysed as NPs, with N being the referential lexical head of the maximal projection and a determiner (which could also be non-overt) occupying the specifier position (Haegeman and Guéron 1999: 65-7; Stowell 1991b: 37-8). The development of X'-theory changed this analysis because NP was, on analogy with IP, recast as 'DP': a determiner D takes an NP as its complement to form a D', which in turn combines with a specifier position (which can be occupied by prenominal genitives) to yield a DP projection (Stowell 1991b: 41-2). Stowell proposes that the referential properties of noun phrases are created by the determiner position; while DPs are referring expressions (116a) and cannot occupy the SC-predicate position (116a'), bare NPs can serve as predicates (116b) but are barred from referential positions in the sentence (116b') (1989: 248-9, 1991b: 44-5).

(116) a. **The president** came to see me today.
a'. *They elected John **the president**.
b. They elected John **president**.
b'. ***President** came to see me today.

This proposal opens a nasty can of worms, though. Stowell realises himself that the dichotomy between predicative NPs and referential DPs is anything but firm. It is true that DPs projected from definite articles, demonstratives, or numerals cannot normally be used predicatively (**I consider John **the/this/one friend***) (Stowell 1991b: 47), but DPs projected by a possessive and especially an indefinite article are regularly found in the predicative position of SCs (*I consider John **my/a good friend***) (Stowell 1989: 251, 1991b: 47). As a matter of fact, only the narrow class of NPs denoting titles such as *president* or *chairman* can be used predicatively without a determiner, while a determiner is required in the SC-predicate position in practically all other cases (Stowell 1991b: 49). These mismatches prompt Stowell to concede that "the apparent occurrence of DPs, rather than NPs, as predicates ... is a complete mystery, as is the ungrammaticality of bare NPs as predicates" (1991b: 47).[73] Discrete grammars are unable to explain why noun phrases, which are typically referential expressions, may be used in the predicative XP-position, because the distinction between referential and predicative noun phrases does not correlate with discrete structural properties such as the presence or ab-

[73] There have been several quasi-solutions to the problem: Contreras posits that "different members of D are marked in the lexicon as either + or – referential" (1995: 147). This is a desperate and purely stipulative expedient; moreover, it does not really work because even if definite articles were marked as [+referential] in the lexicon, there is still conflicting evidence where nouns with definite articles can be used predicatively (e.g. *I consider John **the best man for this job***) (cf. Rapoport 1995: 154). Alternatively, Sag *et al.* suggest an 'archicategory' for predicative phrases that possess a feature such as [+Pred] but are underspecified for lexical category (1985: 119, 141; similarly, Goodall 1987: 45). Yet this solution only shifts the problem to some more abstract level because it is not clear which NPs could be assigned a [+Pred] feature; why is *John is an attorney* grammatical but ??*I consider John an attorney* not? The predicative nature of an NP cannot be established in isolation but depends on the specific construction it is used in.

sence of a determiner (for a non-discrete and functional treatment of predicative noun phrases, see 11.4.6.2).

An observation made by Moro can be used as the last nail in the lexical SC-coffin. Stowell argues that NP_2 is assigned a θ-role by the SC-predicate. This seems indeed to be the case in (117a): the noun *cause* is a two-place predicate, assigning the semantic roles AGENT to *Mary* and PATIENT to *the riot* (Moro 1995: 116). In (117b), the two-place predicate *picture* assigns the semantic roles AGENT to the pronoun *his* and PATIENT to *Mary*. The putative SC-subject *these*, however, is not assigned a θ-role by the predicate (Moro 1995: 116) and thus cannot be its subject argument.

(117) a. John considers **[**$_{SC}$ [$_{DP}$ Mary]$_{+agent}$ ←[$_{DP}$ the cause of → [$_{DP}$ the riot]$_{+patient}$]**]**.
b. John considers **[**$_{SC}$ [$_{DP}$ these] [$_{DP}$ [$_{DP}$ his]$_{+agent}$ best pictures of [$_{DP}$ Mary]$_{+patient}$]**]**.
(from Moro 1995: 116)

Stowell's LP-proposal has proved so resilient in the generative literature despite its many empirical and theoretical drawbacks because it allegedly derives support from observations made in the area of language acquisition. Radford analyses children's sentences such as [*John hungry*] or [*Mommy in kitchen*] as bare projections of lexical categories. Since children under two generally do not use inflections in verbal sentences (e.g. *John eating chocolate*) and do not introduce clauses with complementisers, Radford infers that their grammar does not include functional categories (1990: 112). While children can use SCs in a largely unconstrained fashion, adult SCs are essentially restricted to governed contexts after matrix verbs such as *consider* because the SC-subject needs Case (Radford 1990: 184-5). Yet Radford's motto that "Small children speak Small Clauses", while adults use SCs only in a few restricted contexts (1990: 112), is highly doubtful for several reasons. Adult constructions such as *I consider Mary intelligent* are not only distributionally but also semantically and pragmatically distinct from utterances in early child language; they are rather formal structures and unlikely to be remnants of a more primitive SC-stage in language acquisition. Moreover, most language-acquisition researchers today believe that children's sentences do contain functional projections from a very early stage on (for references see Cardinaletti and Guasti 1995: 11). The main reason why children prefer infinitives to finite verbs (*What Mommy do?*) and frequently do not use a copula (*John angry*) seems to be that they cannot fully master the concept of time/tense (Cardinaletti and Guasti 1995: 17-8). Children obviously live in the *hic et nunc* of their world and therefore do not feel the need to anchor their utterances to time (or place). In any case, adult NP_2 XP-constructions cannot reasonably be related to utterances of early child language.

Stowell's analysis of NP_2 XP-strings as quasi-clauses has increasingly fallen into disfavour after the late 1980s and has been replaced by the rather bold move to assimilate SCs more closely to the structure of canonical clauses.

5.3.3 Small clauses as reduced clauses: do SCs contain functional projections?

In the early 1990s, the dominant mode of thinking on SCs came to be the idea that predicative NP_2 XP-strings might be more similar to infinitives and finite sentences in that they contain functional categories as well. SCs were taken to differ from other clauses in the number and identity of these functional projections in much the same way that non-finite and finite clauses differ from each other in their functional make-up.

An early proposal along these lines was put forward by Hornstein and Lightfoot, who suggested analysing SCs as IPs projected from a zero I-node (118). While finite clauses are [+tense, +AGR] and non-finite clauses are [-tense, -AGR], SCs do not contain a tense or agreement operator at all (1987: 27-8). Hornstein and Lightfoot further speculate that an I marked [± tense] selects a VP as complement, while empty I selects AP, NP, or PP (1987: 28).

(118) $[_{SC = IP}\ NP\ I_0\ XP]$[74]

Although this structure has pointed the way for further analyses, it is clumsy and not very convincing. The notion of 'zero I' does not only complicate the grammar, but is also difficult to substantiate in syntactic terms. It is not clear what it means for a clause to be neither finite nor non-finite; as Aarts puts it, "[t]hat would be rather like having human beings who are neither male nor female" (1992: 182).

The functional analysis of SCs gained fresh impetus when syntacticians started to introduce a more articulated functional structure for canonical clauses. According to the 'Split-I-hypothesis', I was decomposed into separate functional heads, each with its own maximal projection. The number and arrangement of these more atomic inflectional projections has been an arena for ongoing debates, so I will only outline one common version of the theory here (cf. Cardinaletti and Guasti 1993: 41; Cook and Newson 1996: 181-5; Grewendorf 2002: 39; Haegeman and Guéron 1999: 509). The highest functional phrase in a clause is AGR_SP, whose head AGR_S regulates person and number agreement between the subject in the [SPEC,AGR_SP]-position and the verb; if the clause is finite, it is this node that also checks the nominative Case of the subject NP (119a, a'). Embedded under AGR_SP is the maximal category NEGP projected by the node NEG, which is responsible for sentential negation (119b, b'). NEG takes a TP

[74] Hornstein and Lightfoot's notational conventions, like those of some of the proposals that follow, have been slightly adapted to contemporary standards (for example, INFL has been replaced by 'I' and 'S' by 'IP').

as complement, which is projected by the tense operator T (119c, c'). The lowest functional projection is AGR_OP, whose head AGR_O establishes an agreement relation with the direct object in the [SPEC,AGR_OP]-position. In English, number agreement between the verb and the direct object does not have any overt reflex, but AGR_O is also thought to check the accusative Case of the direct-object NP in more recent accounts that no longer work with the structural relation 'government' (cf. 5.1). AGR_O finally takes the VP as its complement (119d, d').[75]

(119) a. $AGR_sP \rightarrow SPEC + AGR_s'$
a'. $AGR_s' \rightarrow AGR_s^0 + NEGP$

b. $NEGP \rightarrow SPEC + NEG'$
b'. $NEG' \rightarrow NEG^0 + TP$

c. $TP \rightarrow SPEC + T'$
c'. $T' \rightarrow T^0 + AGR_oP$

d. $AGR_oP \rightarrow SPEC + AGR_o'$
d'. $AGR_o' \rightarrow AGR_o^0 + VP$

The rich internal structure attributed to ordinary clauses has exerted considerable influence on SC-theory because it could now be argued that SCs need not either contain all functional projections of full clauses or no functional projections at all, but could be identified as functionally reduced clauses: "The term 'small clauses' is generally used in opposition to the term 'full clauses' to convey the idea that the former are morphologically poorer/less complex than the latter" (Cardinaletti and Guasti 1995: xi; cf. also Nakajima 1991b: 41). While the lowest functional head of a full clause selects a VP (cf. 119d'), the lowest functional head of an SC selects an AP, NP, or PP. The postulation of functional projections in SCs now permitted the generalisation that the predication relation between a subject and a predicate is always mediated by some functional projection within a clausal domain (Moro 1995: 110). The search for the functional projections present in SCs has been the main concern of SC-theoreticians since the early 1990s.

Obviously, SCs do not contain an AGR_S-node because there is no person agreement between NP_2 and XP such as exists between the subject and verb of a finite clause (Cardinaletti and Guasti 1993: 56). Moreover, SCs do not function as domains for sentential negation, so they do not seem to include a NEGP-projection, either. In English, the head of the negation projection is realised by the affix *–n't*, which can attach to an auxiliary or be supported by *do* (Haegeman and Guéron 1999: 529); both mechanisms are impossible for SCs, though (120a,

[75] While some syntacticians have fissioned IP into still more functional subprojections, the trend has recently been to reduce the number of functional projections again; AGR_sP has, for example, been conflated with TP. In addition, AGR_OP has generally been replaced by the maximal category νP, whose head ν is assumed to be some transitivity operator or empty causative verb (Grewendorf 2002: 147-52).

a'). The negator *not* is assumed to occupy the [SPEC,NEGP]-position in full clauses (Haegeman and Guéron 1999: 529-30). While the element *not* is marginally acceptable between NP_2 and XP, it does not have scope over the whole SC but only negates the XP-constituent; as is typical of narrow-scope constructs, *not* usually carries emphatic stress (120b) (Bayer 1986: 13-4).[76] These findings indicate that the negator does not occupy the [SPEC,NEGP]-position as in ordinary clauses, but is an adverbial adjoined to the SC-predicate (Cardinaletti and Guasti 1993: 40, 55; Endo 1991: 59-60; Radford 1990: 153; Suzuki 1991: 33).[77] What is more, NPs in the SC-predicate position cannot be negated at all (120b').

(120) a. *I consider her **can't** attractive.
a'. *I consider her **don't** attractive.
b. ??I consider Mary **nót** attractive (why don't you believe me?).
b'. *I consider Mary **nót** a genius.

In addition, most researchers also agree that SCs do not contain a functional projection for tense. Neither do SCs exhibit any typical tense morphology, nor do they tolerate temporal adverbials (Cardinaletti and Guasti 1995: 14). The adverb *yesterday* can take scope over the *that*-clause in (121a) and contrast with the main-clause adverb *today*, but SCs do not allow any independent temporal modification (121b).[78]

(121) a. **Today** I believe that he was sick **yesterday**.
b. ***Today** I consider him sick **yesterday**.

If SCs lack the maximal projections AGR_SP, NEGP and TP, then the only functional projection that they can be invested with is an SC-equivalent of AGR_OP. That SCs are projected by some agreement category has become the standard opinion among researchers subscribing to the reduced-clause hypothesis (e.g. Nakajima 1991b: 41; Suzuki 1991: 28). When the SC-predicate is realised by an NP in English, it shows number agreement with its subject NP (122a, a'); in languages such as French, adjectives agree in number (and gender) with the subject NP as well (122b, b') (Cardinaletti and Guasti 1995: 12; Kikuchi and Takahashi 1991: 87-8).

(122) a. I consider **Mary an attractive woman**.
a'. I consider **Mary and Sue attractive women**.
b. Je considère **Marie intelligente**.
c. Je considère **Marie et Jean intelligents**.

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[76] The contrast is with the positive value of the property that is presupposed by the interlocutor; the speaker of (120b) confirms that in his opinion, Mary cannot be assigned the property *attractive*.

[77] Compare my analysis of modal adverbs such as *probably* as taking narrow scope over the XP-constituent only (5.2.1).

[78] There have been several attempts to explain how SCs can inherit the tense specifications of the main clause. Guéron and Hoekstra, for instance, have constructed an elaborate account of how the event described by the SC can be connected to the tense domain of the main clause, making use of the notion 'T(ense)-chain' (1995: 79-82).

According to the AGR-hypothesis of SCs, the subject NP is located in the specifier of an agreement phrase at some point in the derivation and enters into a SPEC-head relation with an agreement node, which takes XP as its complement (123).[79] The SC-subject is again thought to be exceptionally assigned accusative Case by the main verb (Endo 1991: 61).

(123) $[_{AGRP = SC}$ NP $[_{AGR'}$ AGR^0 XP$]]$

The predicative relation between NP_2 and XP can consequently be assumed to be mediated by an agreement phrase in both full and small clauses; AGR would thus be a structural correlate of predication (Staudinger 1996: 126). The chief difference between predication domains would then simply lie in the number of functional projections included in the clause in addition to AGRP (Guéron and Hoekstra 1995: 78-9; Suzuki 1991: 31).

Since the SC sketched in (123) contains two maximal projections, a lexical projection plus an agreement projection, the movement operations which have been intractable for the bare LP-approach do not pose any problems here. The analysis of SCs as AGRPs has the additional advantage that it offers a representational space for *as*, namely as the spell-out of the agreement node.

The AGR-analysis of SCs may have been compelling for generative grammarians at some point, but it has lost its appeal since it has been realised that the agreement node cannot be responsible for the predication relation holding between NP_2 and XP. Moro quotes a number of Italian examples where there is no agreement between the NP_2 and XP of an SC (1995: 114) and concludes that "if the predicative relation involves a form of agreement, this cannot be a necessary condition for this relation to be established" (1995: 115).[80] In most English sentences there is agreement between NP_2 and XP, but there are also counter-examples that show that "[w]hat is required is semantic compatibility, not syntactic agreement" (Huddleston and Pullum 2002: 255).

(124) a. I consider **these people** (pl.) **a nuisance** (sg.).
b. Tolstikov is a wealthy professional athlete, yet he considers **bananas** (pl.) **a luxury** (sg.) (BNC AJR: 538).
d. I consider **John** (sg.) **three sheets to the wind** (pl.).
e. I consider **the distance** (sg.) **at least 200 metres** (pl.).

Moro admits that "[w]e still do not know whether the predicative relation derives from independent modules of grammar" (1995: 118). Since the predicative character of SCs cannot be attributed to an agreement node, Moro resorts to a minimal solution. He speculates that an SC

[79] The head X^0 of the SC-predicate must move to AGR^0, where it can 'pick up' the relevant agreement features (Staudinger 1996: 37).

[80] If we look beyond English, we see that the predicative relation is frequently independent of structural agreement. This is the case in Japanese, which does not have any agreement features at all (Kikuchi and Takahashi 1991: 88), and, closer to home, in German, where the putative SC-predicate is required to appear in the uninflected form of the adjective: *Ich finde die Mädchen* ***sehr *attraktive/ attraktiv***.

has the status of a predicative phrase which is projected by an empty "predicative head" (1995: 118). Similarly, Bowers contends that an SC is a "predicate phrase" headed by the empty functional node PR, which mediates the predication relation between NP_2 and XP. While Bowers also posits this node for full clauses in addition to all other functional categories, he thinks that SCs are instantiations of bare PRPs (1993: 595).

(125) They consider **[**$_{PRP}$ John [$_{PR'}$ [$_{PR}$ e] [$_{AP}$ crazy]]**]**. (from Bowers 1993: 595)

If *as* cannot regarded as the formal realisation of an agreement head, it may be recast as the spell-out of the predication node (Bowers 1993: 596-7; Moro 1995: 119).

But the assumption that the predication between NP_2 and XP is established by an abstract functional head is not a permissible way out of the dilemma because it is based on stipulative fiats. There is a predicative relationship between NP_2 and XP, which according to SC-theory must have some functional correlate; since it has not been possible to identify one of the existing projections with this medium of predication, an empty functor is smuggled into the representation and is then taken to be responsible for the predicative relation.[81] The further development of SC-theory has largely given up the reduced-clause hypothesis and has attempted to fit SCs even more strongly into the architecture of ordinary clauses.

5.3.4 Small clauses as IPs: do SCs contain an empty copula?

Largely parallel to the formulation of the reduced-clause hypothesis, some SC-theoreticians have suggested analysing SCs as ordinary IPs (Aarts 1992: 180; Staudinger 1996: 144). As in non-finite clauses, the I-node is held to be marked [-tense] because SCs cannot establish an independent tense domain and I does not assign nominative Case to its subject; as in finite clauses, however, I is specified as [+Agr] to account for the agreement relation normally holding between NP_2 and XP (Aarts 1992: 180-1). I is further maintained to select a VP in the same way as canonical clauses; the distinguishing mark of SCs is that this VP is projected from an empty copula verb BE, which takes XP as its complement (126) (Aarts 1992: 181).[82] The predicative relation between NP_2 and XP is thus not attributed to an agreement projection, but is seen as a function of the abstract predicator BE in the same way as in normal copula sentences (Aarts 1992: 181).

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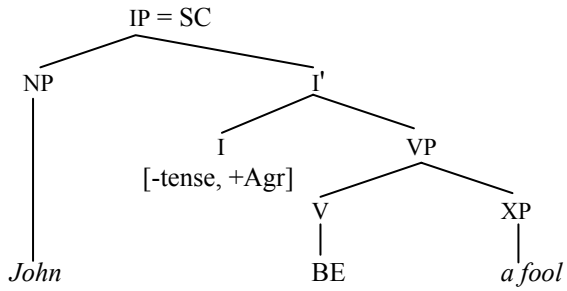
[81] Within a minimalist framework, there is also the possibility that the functional head ν could establish the predication relation between NP_2 and XP (cf. footnote 75; Thomas Hoffmann, p.c.).

[82] NP is in the [SPEC,IP]-position and is thus in a SPEC-head configuration with I. This relation guarantees the number agreement between NP and XP because the agreement features of I are thought to be lowered onto BE and then transmitted to XP (Aarts 1992: 181).

(126)



The conjunction/preposition *as* can be represented in two ways in this system. It could be argued that *as* is the formal instantiation of the abstract copula (Emonds 1984: 127). This would explain the predicative relation holding between NP_2 and XP in the [NP_2 *as* XP]-construction as well as the fact that the putative preposition *as* can be followed by APs and PPs in addition to NPs because copulas can also be followed by all kinds of phrases (Ogawa 1994: 444-5). However, one would miss many of the specific properties of this construction if one analysed *as* as a quasi-verbal element initiating a predication between the phrases preceding and following it. That *as* is not a "counterpart to *be*" (Emonds 1984: 127) can be demonstrated with sentences where *as* is followed by *being* (for examples see (52) in 4.3.) because such sentences would have to be analysed as containing two consecutive copulas (Ogawa 1994: 445). Alternatively, it could be claimed that *as* is an inflectional element positioned in I (Aarts 1992: 182), in much the same way that proponents of the reduced-clause hypothesis interpret *as* as the spell-out of the agreement node. In analogous sentences with *for* instead of *as* (e.g. *He mistook her for a secretary*), *for* would also be treated as an inflectional element (Aarts 1992: 123). The relative ease and flexibility with which *as* can be identified as an abstract copula or a functional item in SC-theory should cause suspicion, though. Incorporating words such as *for* and *as* into the class of inflectional elements on a par with auxiliaries means stretching this class to a point where it becomes almost meaningless; to mention just one difference, auxiliaries such as *be* or *have* can be inflected for number, while *as* and *for* are morphologically invariant. *As* is not simply a formal device that some verbs use optionally or obligatorily to establish a subject/predicate relationship between two phrases. Section 11.4.6.2 will show that *as* also has a characteristic semantic load that is completely neglected in such an analysis.

New developments in the theory of government and Case in the wake of Chomsky's *Barriers* (1986b) allowed a more sophisticated account of how the SC-subject can be exceptionally Case-marked by the matrix verb in the IP-version of SCs (for the unsuccessful attempts to rationalise ECM in the LP-approach, see footnote 71). A verb such as *consider* can be argued to take a CP-complement when the complement clause is finite (127a), but an IP-complement when the clause is non-finite (127b) (Haegeman and Guéron 1999: 101, 108). Since there is

no complementiser or finite verb in an SC, such constructions could be regarded as IPs marked [-tense] like infinitival clauses (127c).

(127) a. I consider **[**$_{CP}$ that [$_{IP}$ John is a fool]**]**.
b. I consider [$_{IP}$ John to be a fool].
c. I consider [$_{IP}$ John a fool].

In (127a), *John* is assigned Case by finite I under a SPEC-head agreement relation, while *John* in (127b, c) must be exceptionally governed and Case-marked by the matrix verb *consider*, non-finite I not being a Case-assigner. That the maximal projection IP, unlike CP, is transparent to outside government is explained in the following way: in (127b, c), *consider* governs and theta-marks an IP-complement; on the assumption that I and IP are related on a projection line (Sternefeld 1991: 17), *consider* also governs the non-finite and SC-head I, respectively. The infinitival subject in (127b) and the SC-subject in (127c) are in the specifier position of IP and thus in a SPEC-head relation with the node I, which implies that they share the features of I. As a result, the matrix verb can be claimed to govern the specifier position of IP as well and thus to be able to assign accusative Case to it (Aarts 1992: 185; Haegeman and Guéron 1999: 135-6). In (127a), on the other hand, *consider* governs and theta-marks a CP-complement, and thus cannot govern or assign Case to the specifier of the lower maximal projection IP. The CP-projection consequently acts as a 'barrier' between the matrix verb and the specifier of the lower projection IP (Grewendorf 2002: 93-4; Haegeman and Guéron 1999: 136; Stowell 1989: 237). *John* in (127a) is therefore not Case-marked by *consider*, but receives its (nominative) Case within the finite IP.

If *consider* is used in a passive sentence, it cannot assign accusative Case; both the infinitival and the SC-subject must consequently move from their D-structure position in the subordinate clause to the subject position of the matrix clause at S-structure, where they can be assigned nominative Case by the finite I-node of the matrix clause (128a, b) (Basilico 2003: 4; Haegeman and Guéron 1999: 203-7; Staudinger 1996: 161). As in Stowell's account, the accusative marking of the SC-subject and the fact that it can be transposed in the sentence independently of the SC-predicate are therefore not thought to be evidence of the direct-object status of NP_2 or the non-constituency of the SC, but are explained as S-structure phenomena that can be attributed to the requirements of Case theory.

(128) a. **John**$_i$ is considered [$_{IP}$ ***t***$_i$ to be a fool].
b. **John**$_i$ is considered [$_{IP}$ ***t***$_i$ a fool].

The IP-hypothesis of SCs thus proposes a close relationship between non-finite and small clauses, the chief difference between them being that non-finite clauses contain an overt cop-

ula while SCs only include an abstract BE.[83] The explanation that the predicative relationship obtaining in an SC is established by a copula as in related non-finite complement clauses is deceptively simple, but it is empirically untestable. In many putative SC-constructions the copula can never be explicit (e.g. *The waitress wiped* [*the table* (**to become*) *clean*]; *John drank* [*his coffee* (**to be*) *hot*]), so the assumption that the two elements of the SC are mediated by abstract BE is purely stipulative (Contreras 1987: 229). Furthermore, while infinitival structures allow identity predications and the inversion of NP and XP (cf. *I consider the chairman to be John/ I consider John to be the chairman*), this is not possible in SCs (**I consider the chairman John/ *I consider John the chairman*) (Moro 1995: 112). To explain these differences with the absence of an overt verb in SCs (cf. Starke 1995: 265-6, footnote 27) is circulatory. Finally, if SCs and non-finite clauses with *to be* are basically the same construction, it is puzzling that they should not have the same distribution in a sentence. To take just one example: while non-finite clauses can appear in the subject position when they are introduced by the preposition *for* (***For John to lose*** *would be a pity*), this is not possible for SCs (****For John a loser*** *would be a pity*). Despite these striking mismatches, the idea that non-finite and small clauses are identical underlyingly and both contain inflectional projections seems to have won the day — and this has not even been the boldest step taken in the direction of clausal uniformity, as the following chapter will show.

5.3.5 Small clauses as CPs: are full and small clauses identical?

The controlling idea of an influential study by Starke (1995) is that not only non-finite and small clauses, but all clauses have the same structural make-up at D-structure. Starke thus makes the strong claim that the underlying architecture of a SC does not differ from that of a finite clause (129) (1995: 238-9).

(129) a. John believes **[**$_{CP}$ that [$_{IP}$ Mary [$_{VP}$ is [$_{AP}$ intelligent]]]**]**.
b. John considers **[**$_{CP}$ [$_{IP}$ Mary [$_{VP}$ [$_{AP}$ intelligent]]]**]**.

This proposal has two rather sweeping consequences. Firstly, all arguments that receive a propositional θ-role can now be treated uniformly as CPs; this implies that the Projection Prin-

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[83] If the copula is treated as a raising verb, as is standardly done in generative grammar (cf. **[**John$_i$ is [t$_i$ a fool]**]**, non-finite complement clauses must be argued to be basically SCs as well. In a raising account, *be* is a one-place predicate that selects an SC; the SC-subject must move to the [SPEC,IP] position in order to be exceptionally Case-marked by the matrix verb (see e.g. Moro 1995: 120-1):

I consider **[**$_{IP}$ John$_i$ to be [$_{SC}$ t$_i$ a fool]**]**.

What this account gains in systematicity, it loses in explanatory power, though: while the standard IP-hypothesis of SCs argues that the predicative relation between NP_2 and XP is mediated by an abstract copula, the raising version needs to find another medium for predication, such as the empty predicative node in Moro's account (see 5.3.3; for more criticism on the raising representation, see Hatakeyama 1997: 31-2).

ciple can be interpreted in its most rigid sense because the subsidiary mechanism of CSRs has been made superfluous: propositional θ-roles are invariably instantiated as CPs, and marked structural realisations as IPs or SCs need no longer be specified in the lexicon. Secondly, all construction-particular variation with regard to clauses can be dispensed with if it is assumed that clauses have identical internal structure as CPs, no matter if they are finite, non-finite, or small (Starke 1995: 250): "Just as structure must be built out of uniform X-bar units, structure is built out of uniform 'clausal' units; i.e., syntactic structures are constructed of a (categorically underspecified) CLAUSAL SKELETON" (Starke 1995: 248). In a similar vein, Sportiche maintains that there is a mutual relation between the notions 'predicate' and 'clause' in the sense that a predicate is always associated with a full clause (i.e., a CP) and every full clause contains a predicate (1995: 288).

Although the suggestion that SCs could be CPs (or S's in the older notation) has been ventured before (Coopmans and Stevenson 1991: 365-6; Kitagawa 1985: 210), Starke's and Sportiche's studies are the first detailed explications of this hypothesis. Starke's central piece of evidence concerns the existence of the morpheme *as* in some SC-constructions. He argues that *as* can be analysed as the spell-out of the complementiser node like *that* in finite clauses and *for* in non-finite structures (1995: 248; similarly Rafel 2001: 477-8). *As* is what he calls a "functional preposition", which unlike lexical prepositions such as *in* or *after*, but similar to *for*, is phonologically light and has only fuzzy semantics (1995: 245). Starke presupposes a complementary distribution between complementisers such as *that* and *if*, which occur only in finite clauses, and the functional prepositions *as* and *for*, which are restricted to non-finite and small clauses (1995: 247). The fact that *as* can be followed by APs and PPs is no counter-argument to Starke's theory because *as* does not directly select an AP or PP complement, but another functional projection such as IP (Rafel 2001: 478; Starke 1995: 246).

As a consequence, a main verb assigning a propositional θ-role always subcategorises for a CP and, by extension, a complementiser element such as the preposition *as* (Starke 1995: 240). What kind of complementiser is selected — e.g. *that*, *for*, *as*, or even ∅ — is strictly a function of the specific verb (cf. 130) (Starke 1995: 263, footnote 9).

(130) John regards **[**$_{CP=SC}$ Mary [$_{C'}$ [$_{C}^{0}$ as [$_{IP}$ ... [$_{VP...}$ [$_{AP}$ ... intelligent]]]]]**]**.[84]

[84] Recently, the CP-system has been split up into smaller functional projections as well (Grewendorf 2002: 66). These functional projections include, among other things, a focus projection (FOCP) and a topic projection (TOPP) (Grewendorf 2002: 69). I will continue using 'CP' as a shorthand representation although the 'split CP-hypothesis' has made its impact on SC-theory as well. Basilico, for example, argues that the highest functional projection in an SC is a TOPP and that the SC-subject must occupy the [SPEC,TOPP]-position at some point in the derivation (2003: 8-9).

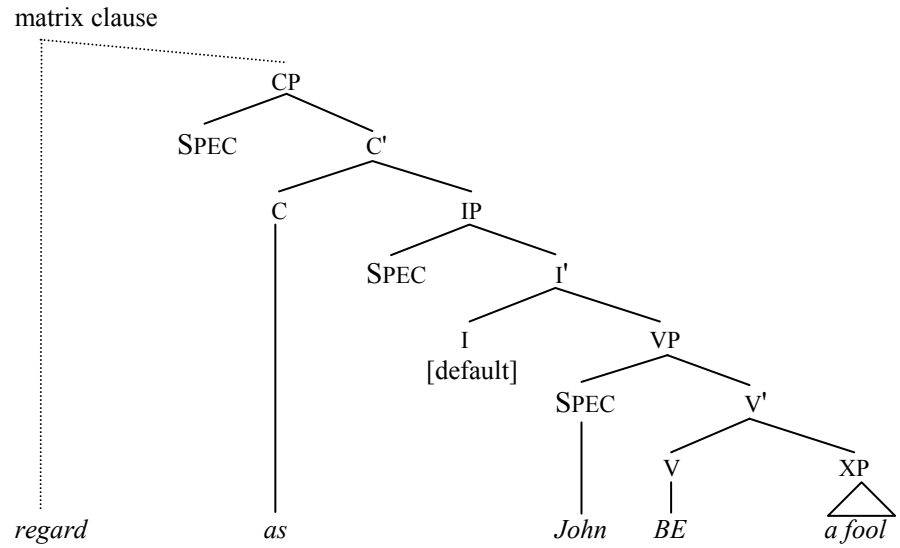
The representation of (130) is, of course, not detailed enough because it does not make explicit what functional projections are hidden behind the shorthand 'IP' and what verbal element an SC is supposed to include. Starke's answer to the first question is rather striking: "If SCs are CPs, not only do they contain a functional projection ..., but they contain the full set of functional projections (under the standard hypothesis that there can be no 'holes' in structure, i.e., that the presence of a high functional projection entails the presence of all the projections it is taken to dominate ...)" (1995: 248). How can this bold statement be reconciled with the findings of the reduced-clause hypothesis that SCs do not contain functional projections such as TP or NEGP? Starke's forceful contention is that all of these projections are present underlyingly, but do not have any morphological content (1995: 260; similarly, Sportiche 1995: 288). Since the functional categories for tense and negation are never spelled out in an SC, they have default values and therefore never set the tense or negation parameters independently of the main clause (Starke 1995: 260). In the extreme case, all functional categories in SCs are represented by silent morphemes restricted to their respective default setting. In addition to containing the full range of functional projections, SCs are claimed to include a null copula BE like in the IP-hypothesis of SCs (Starke 1995: 249); this abstract predicator then selects the SC-predicate XP. Both in small and copula clauses, the predication relation between the subject NP and predicate XP is thus established by a verbal element (Starke 1995: 250).

The CP-hypothesis Starke's study has set in motion has become rather influential because it seems to be a perfect correlate to the so-called 'VP-internal subject hypothesis' that governs the current understanding of canonical clauses. Classical GB-theory has tolerated an asymmetry by generating object arguments of a verb within the VP-projection, but having the subject argument originate in the [SPEC,IP]-slot. The VP-internal subject hypothesis has remedied the situation by speculating that the subject argument is base-generated in the [SPEC,VP]-position and only moves to [SPEC,IP] for Case reasons (Bowers 1993: 592; Grewendorf 2002: 51). The unifying consequence of this hypothesis is that all arguments of a verb originate within the maximal projection VP. Although generative grammarians frequently mention the empirical vulnerability, or rather untestability, of the VP-internal hypothesis (Sportiche 1995: 290), it has acquired something like a *communis opinio* status in recent years.[85] As a consequence of

[85] The factual basis of the VP-internal subject hypothesis is extremely tenuous. The main empirical argument is derived from so-called 'floating quantifiers' (e.g. *all*), which are hypothesised to originate in [SPEC,VP] together with the NP they quantify and to be left stranded in this position when the rest of the NP moves to [SPEC,IP] (Bowers 1993: 618; Grewendorf 2002: 48-9). Such an analyis assumes synonymy between sentences where the quantified NP has been moved as a whole (***All the prisoners*** *have escaped*) and those where the quantifier has remained *in situ* (*The prisoners have* ***all*** *escaped*) (Haegeman and Guéron 1999: 288). Although such pairs of sentences deserve more extensive analysis, I venture an alternative proposal that takes these sentences as instan-

this theory, the D-structure position of subjects in both small and canonical clauses is different from its surface position. (131) contains an X'-representation of SCs as CPs which also integrates the VP-internal subject hypothesis (the default inflectional categories have been conflated under an I-node).

(131)



Some researchers have even flirted with the idea of generalising the VP-internal subject hypothesis to an XP-internal subject hypothesis: they argue that there is no verb in an SC and that the SC-subject is base-generated in the [SPEC,XP]-position (Basilico 2003: 5; Rafel 2001: 481-2; Sportiche 1995: 290).[86] In this view, "small clauses become the norm" (Sportiche 1995: 290) because all clauses are originally 'small' in the sense that they consist of a lexical projection (VP or NP/AP/PP) that is augmented by functional projections (Haegeman and Guéron 1999: 326; Wilder 1994: 227). As Stowell notes, SC-theory was originally invented to explain an uncanonical type of clause, "but in the end something like the opposite has happened, as the syntax of virtually all sentence-types is now standardly analysed in terms of layers of small clause-like structures" (1995: 272). In many respects, the contemporary analysis of SCs is a combination of Stowell's bare LP-approach and Starke's CP-approach: SCs are

tiations of two semantically different constructions. In the sentence *All the prioners have escaped*, the prisoners are presupposed as an entity (e.g. as all the prisoners of a certain prison, a certain cell etc.) before something new is predicated of them. In the sentence *The prisoners have all escaped*, on the other hand, the prisoners are treated as a collection of individuals, which only behave as an entity with respect to what is predicated of them in a specific instance. The quantifier in the latter sentence, which appears in an adverbial position, is stressed to emphasise the fact that the individuals mentioned in the subject NP exceptionally show the same behaviour with respect to the predicate. For more problems associated with a derivational approach between quantifiers that are part of the subject NP and those that are in a more rightward position in the sentence, see Bobaljik (to appear).

[86] While the VP-internal subject hypothesis can at least be argued to be weakly confirmed by 'floated quantifiers' (see preceding footnote), there is nothing in the way of empiry corroborating the XP-internal subject hypothesis. Sentences such as ??*John regards the kids all as a nuisance* (Starke 1995: 252) have been classified as marginal at best by my informants (ROS: 55).

lexical projections of a category X, whose subject is in the [SPEC,XP]-position, but they are extended by functional projections up to the CP-level. Such XP-internal subject analyses, however, have to assume that the subject/predicate relationship is not contingent on the presence of a verb (even if it is only an abstract copula), but is a primitive of grammar (Raposo and Uriagereka 1995: 181-2), and would then also have to explain how and why NPs can be predicates as well (Bowers 1993: 593) — a problem that has already been tackled unsuccessfully by Stowell (cf. 5.3.2) and which is not sufficiently addressed in recent theories.

Of course, no matter if the subject is taken to originate in [SPEC,VP] or [SPEC,XP], the D-structure representation of (131) does not resemble the S-structure of NP_2 XP-strings very closely; in empirically observed sentences, the NP *John* is in the pre-*as* position and has the accusative Case of direct objects. To achieve the required S-structure configuration, Starke invents the following scenario: [SPEC,VP] is not a Case-position, so the SC-subject must move to the closest position where it can receive Case (Starke 1995: 252). It passes through all the specifier positions of the functional projections assumed in the clause (such as [SPEC,AGRP][87], [SPEC,TP] or [SPEC,NEGP]) to the highest specifier position of the I-system (e.g. [SPEC,AGR_SP]). For finite clauses, this is also the derived subject position because finite I can check the nominative Case of an NP in its specifier (Grewendorf 2002: 51; Haegeman and Guéron 1999: 232). The subject of small clauses, however, cannot receive Case in [SPEC,IP] because neither is non-finite I a Case-assigner nor can the matrix verb Case-mark an NP across a CP-boundary. The subject NP will therefore continue to move to the [SPEC,CP]-position; yet this cannot be its ultimate landing site either because the subject can be displaced independently of the *as* XP-string (e.g. ***Who** do you regard **as a fool**?*), something that would be impossible if it were the specifier of this maximal projection (Starke 1995: 252). Starke therefore speculates that the SC-subject leaves its clausal domain and moves to the [SPEC,AGR_OP]-position of the matrix clause, where its accusative Case can finally be checked (132) (1995: 252; similarly, Basilico 2003: 17; Sportiche 1995: 293). As in the preceding theories, the SC-subject must further move to [SPEC,IP] of the matrix clause if the main verb is in the passive. The scenario depicted for SCs holds for the subjects of infinitival complements as well (Grewendorf 2002: 165; Martin 2002: 156; Starke 1995: 252).

(132) John regards **[**$_{AGR_O P}$ $Mary_i$ .... [$_{CP = SC}$ t_i [$_{C'}$ as [$_{IP}$ t_i … [$_{VP}$ t_i BE intelligent]]]]**]**.[88]

[87] The [SPEC,AGRP]-position assumes a central place in this derivation (as in the reduced-clause hypothesis) because it is here that the number features of the SC-subject are checked so that an agreement relation between NP_2 and XP can be established (Rafel 2001: 483; Sportiche 1995: 291).

[88] In many respects, the generative treatment of predicative NP_2 XP-strings has come full circle: as in Postal's raising analysis, NP_2 is the deep structure subject of a complement clause and the derived object of the main

The upshot of Starke's account is that SCs are not small, but "full-fledged clauses"; in other words, they are "full but rather empty clauses" (Starke 1995: 260); conversely, it could also be said that full clauses are essentially SCs as well (Sportiche 1995: 290). It is difficult to sculpt irrefutable arguments against the CP-theory of SCs because this theory does not lend itself well to empirical testing; it is a theory that can only fall to the ground of its own weight because the postulation of empty morphemes and default parametric settings remains, in the final analysis, non-explanatory. I will therefore restrict my criticism to a few remarks on the major innovation of Starke's theory, namely the claim that *as* is a complementiser that constitutes the highest functional node in an SC.

The definition of *as* as a complementiser is another attempt to arrive at a specification of this word within the rigid template of X'-theory, but it is subject to the problem already cited with respect to the treatment of *as* in the reduced-clause and IP-hypotheses: attempts to assimilate *as* to theoretical notions such as 'agreement node' or 'complementiser node' usually meet with very limited empirical success. To begin with, true complementisers and *as* differ in their distributional behaviour in the sentence: while *that* or *for* occur at the beginning of a subordinate clause in front of the subject (e.g. *I think* ***that he****.../ I want* ***for him*** *to...*), the putative complementiser *as* is placed after the subject (e.g. *I consider* ***him as****...*). Further counting against the complementiser-analysis of *as* is the fact that SCs can never be introduced by complementisers such as *that*, *if*, *whether* or *for* (e.g. **I didn't consider* ***whether*** *it suitable*), so we do not have any independent piece of evidence that *as* must belong into the same functional class (Radford 1988: 327). Similarly, the fact that SCs after *regard*-type verbs do not even commute with finite *that*-clauses or non-finite *for*-clauses (**I regard* ***that John is a fool****/ *I regard* ***for John to be a fool***) would go completely unexplained in the CP-hypothesis. The most serious objection against analysing *as* as a functional preposition occupying the C-slot is that *as* does not assign Case to the SC-subject. This problem is rendered all the more acute when we include the functional preposition *for*: when *for* introduces an infinitival clause, it assigns Case to the subject of the clause (e.g. *I'm waiting* [***for him*** *to arrive*]), but *for* does not Case-mark an SC-subject (e.g. **He took* [***for him*** *a fool*]). This problem has been noticed by Starke as well, yet his explanation for the mismatch remains impressionistic. Starke claims that the functional preposition cannot Case-mark the SC-subject because it needs to assign Case independently to the SC-predicate if XP is realised as an NP (1995: 254-6). This argu-

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verb. If I see it correctly, the use of functional categories such as AGR_OP is a way to circumvent the requirements of the Projection Principle because NP_2 can move to a position in the main clause that has not been subcategorized for by the matrix verb. In the MP, which no longer contains the Projection Principle, an SC-analysis and a raising-analysis are compatible (Kleanthes K. Grohmann, p.c.).

ment is flawed, however. As has already been illustrated for German in 4.3 (cf. (53b-b")), the case of the NP in the XP-position is not determined by *als* or *für* in German, but covaries with the case of NP_2. The only element that consequently needs to be assigned Case is NP_2, but it is not Case-marked by the putative functional prepositions *as*, *for* or ∅. In sum, attempting to define *as* as the spell-out of the agreement node, the predicative node, the abstract copula BE or the complementiser node is guesswork run riot.[89]

Starke's theory manages to overcome most of the distributional mismatches of the SC-analysis, but to the detriment of empirical testability. To account for the accusative Case on NP_2, Starke has this phrase move in various steps out of its clausal domain to a position in the matrix clause where its Case can be checked.[90] SCs are saved as clausal constituents only at the cost of dissociating thematic relations posited at D-structure from empirically observed features, which are relegated to a more peripheral surface representation. As has been laid out in 3.2, solving distributional mismatches on separate representational levels and with the help of various abstract subtheories challenges, in the end, the aim of explanatory adequacy itself. The SC-account sketched in the following section, for example, is clearly beyond both descriptive and explanatory adequacy.

5.3.6 Small clauses as complex clauses: are some SCs larger than full clauses?

Rafel has followed up on Starke's CP-analysis of SCs but theorises that SCs introduced by an overt complementiser are actually more complex than canonical clauses. In his view, the following alternative structural representation of SCs selected by *regard*-type verbs is called for (2001: 481):

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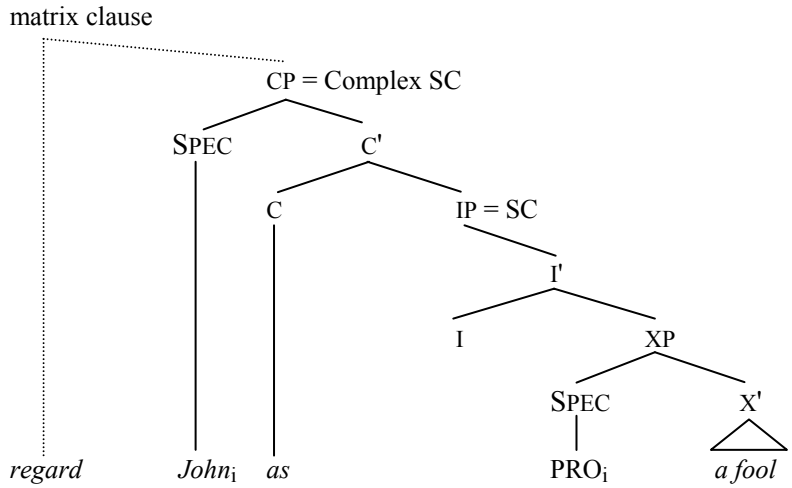
[89] It is, by the way, difficult to establish the limits of speculation. Another unorthodox suggestion is made by Ogawa, for example, who claims that *as* is the subject NP of the SC (1994: 446). Ogawa admits that "[a]t first sight, this seems to be absurd" (1994: 445), but I feel forced to add that this analysis remains quite absurd even after closer examination. The starting-point for Ogawa's proposal are sentences in which *as* serves as a relative pronoun taking the whole matrix clause as its antecedent (e.g. "*He is a foreigner,* ***as*** *is evident from his accent*"; Ogawa 1994: 447). In an attempt to find a common denominator for all uses of the polyvalent word *as*, Ogawa analyses the postverbal string of *regard*-type sentences as follows:

I regard him as a fool
NP [$_{SC}$ PRO XP] (from Ogawa 1994: 449)

In this view, *as* is an empty pronominal subject of the SC, which takes the NP *him* as its antecedent in much the same way as a relative pronoun (Ogawa 1994: 450-1). But there is absolutely no functional or distributional foundation for an analysis of *as* as an NP in such sentences, and it is not clear that it is desirable to reduce the diversity of uses of this word to only one function.

[90] There is even a technical flaw in Starke's account, as Rafel has observed (2001: 479). The SC-subject moves from its base-generated position in the specifier of VP to the [SPEC,AGR_OP]-position in the matrix clause, passing through [SPEC,CP] on its way. The [SPEC,CP] position, however, is commonly assumed to be an A'-position (cf. footnote 68) and thus to be not eligible as a landing site for argument NPs. Since mixed [A, A', A] chains are disallowed (Basilico 2003: 6), Starke's proposed movement operation is illicit from a theoretical point of view as well.

(133)



Rafel is a proponent of the XP-internal subject hypothesis and assumes that the SC-subject is base-generated in the [SPEC,XP]-position. His major contention is that an [NP$_2$ *as* XP]-string is actually composed of two SCs, each establishing its own subject/predicate relationship. He identifies the lower SC with the lexical XP-shell, which is extended by functional projections of the I-system, and argues that this projection contains a relationship between a PRO-subject[91] and a predicate such as *a fool* (Rafel 2001: 482). The subject of the higher or complex SC is an NP such as *John*, which is base-generated in [SPEC,CP][92]; the predicate of this NP is claimed to be a predication itself, namely the lower SC [PRO *a fool*]. The complex SC in (133) thus contains two predications: a lower (or internal) predication holding between PRO and *a fool*, and a higher (or external) predication obtaining between *John* and the lower SC (Rafel 2001: 482). The two predications are kept together by a co-indexing mechanism: the lower subject is an empty pronoun that is obligatorily co-referential with the higher subject NP. Rafel compares this control pattern to similar relationships holding in infinitival constructions, e.g. "*Peter*$_i$ *doesn't want* PRO$_i$ *to be a fool*" (Rafel 2001: 487).

In Rafel's theory, the additional higher predication is the major difference between complex SCs and ordinary SCs without an overt complementiser (e.g. *I consider* ***John a fool***). Both types of SC have a property predicated of a subject, but in complex SCs the situation contained in the lower SC is then predicated of an additional subject (Rafel 2001: 492).

[91] In contrast to traces, which only occur at S-structure as the result of derivational processes, PRO is a base-generated empty element (Haegeman and Guéron 1999: 390). In order to be interpretable, PRO must normally be co-indexed with an overt argument that controls its meaning.

[92] An argument NP could not be base-generated in this A'-position in classical X'-theory, of course. Rafel works with the MP-notion of merging, so the NP and C' are simply merged and result in the more complex projection CP. The distinction between A-positions and A'-positions consequently no longer holds in the MP (Cook and Newson 1996: 314-5).

Rafel's semantic argument for the two predications allegedly initiated by the SC-complement in *The committee took* ***you for intelligent*** runs as follows:

> as a modal head, the particle *for* here indicates that the state of affairs that it introduces, namely [PRO intelligent], is a presumed situation. That is, a situation that holds in a possible world, say W2. The syntactic configuration of the CSCl ['complex small clause'; H.S.] ..., then, allows this presumed state of affairs to be predicated of the individual that the CSCl subject refers to. (Rafel 2001: 492)

In Rafel's opinion, the regular SC-complement in *The committee considered* ***you intelligent*** only attributes the property *intelligent* to the SC-subject *you*, while the complex SC in *The committee regards* ***you as intelligent*** attributes a presumed situation to the subject (Rafel 2001: 492). To substantiate this semantic hypothesis, Rafel adduces sentences such as *The committee regarded* ***you as if you were intelligent***, which he argues make the semantics of complex SCs more explicit syntactically because they contain two subject positions after the main verb (Rafel 2001: 494).

Rafel's account is only the last link in a long chain of SC-hypotheses that have increasingly moved away from sound empirical and semantic judgements. The representation of (133) is based on three aligned ideas that do not square well with linguistic intuitions and empirical facts. Firstly, there are no semantic grounds for assuming that an [NP_2 *as* XP]-string actually contains two predications. The postulated higher predication between the subject and a presumed situation is illusory: the predication in *I regard* ***you as a fool*** does not have a more hypothetical truth status than that in *I consider* ***you a fool***; what is more, the sentences containing qualifying *as* are not synonymous with sentences containing counterfactual *as if*. In the examples of (134), the phrases following *as if* do not ascribe a property or role to the postverbal NPs, but give a counterfactual description of these phrases:

(134) a. The old man was regarding him **as if** he were a strange species behind bars (BNC K8R: 1881).
b. First of all the tenth-century reformers should not be viewed **as if** they were eleventh-century papal reformers (BNC ADC: 1339).

If there is no semantic difference between SCs with 'overt complementisers' and those with 'covert complementisers', two different SC-representations are unwarranted. All SCs are either CPs containing one predication or CPs containing two predications, with the latter analysis turning our intuitions about the relative complexity of SCs upside down, though.

Secondly, the control relation posited to exist between the co-indexed higher NP-subject and the lower PRO-subject is empirically untestable and syntactically unsound. Control relationships are usually established when the subjects of two subclauses within a complex clause construction share the same referent and the subject expression of one clause is not syntactically realised (e.g. I_i *want* PRO_i *to come*). The empirical basis for the control structure is the

fact that the second subject can and must be overtly realised when it is not co-referential with the first subject (e.g. *I want John to come*). Postulating a control relationship within the same clause does not make any sense syntactically because there is no way that the putative second subject can be different from the first (**I regard John*$_i$ *as* ***Mary***$_j$ *a fool*). The predicative relationship holds directly between NP_2 and (*as*) XP, and is not mediated by an additional PRO-subject.[93]

Thirdly, Rafel's claim that his representation (133) overcomes the movement and Case-problems of Starke's theory is not convincing. Rafel's explanation why *as* cannot assign Case to NP_2 is no less impressionistic than Starke's suggestions (see Rafel 2001: 489-91), and he simply argues that "PRO presumably checks some kind of null Case by default" (Rafel 2001: 484). As in Starke's theory, the subject of the higher SC must move from [SPEC,CP] to [SPEC, AGR_OP] in the main clause to check accusative Case (Rafel 2001: 486).

Rafel's analysis drastically misrepresents the object of investigation, so we are well-advised not to adopt such excrescent theoretical entities as 'complex small clauses' into our analysis of NP_2 *as* XP-constructions.

5.4 Problems of classifying small-clause patterns

Chapter 4.1.4 has illustrated the difficulties descriptive grammarians have in coming to grips with the different semantic relationships underlying *consider*-type sentences, depictive structures and resultative patterns. Such semantic questions are given a wide berth by most generative grammarians as well, and like in descriptive grammars, most of the generative debates on depictive and resultative structures are posed in terms of a rather fruitless complement/adjunct distinction.

SC-theoreticians have positioned themselves at two different points in this debate. Like Jespersen in his theory of dependent-nexus structures, Hoekstra (1988; 1992) and Kayne (1985: 121-2) do not make a distinction between SCs selected by *consider*, *paint* or *eat*; in all three of these patterns, they argue, the matrix verb subcategorises for the whole SC and not a direct-object NP_2:

(135) a. John considers [$_{SC}$ Mary intelligent].
b. John painted [$_{SC}$ the door red].
c. John ate [$_{SC}$ the meat hot].

Like descriptive grammarians, Hoekstra and Kayne are confronted with the problem that the XPs in (135b) and (135c) are not obligatory elements in the structure (cf. *John painted the*

[93] The PRO-hypothesis is, incidentally, not as new as it seems; it has already been put forward and rejected by Chomsky (1981: 109).

door; *John ate the meat*). Hoekstra maintains that "the implications ... that e.g. the door is painted ... result from what I call a shadow interpretation" (1988: 117); in other words, a verb such as *paint* can either select a direct object NP_2 or an SC-argument, and the two expressions are not reducible to one another. When the verb subcategorises for a subject/predicate relationship, "the SC denotes a state of affairs which is presented as a consequence of the activity or process denoted by the verb" (Hoekstra 1988: 121). According to this reasoning, the main verb does not assign a θ-role to NP_2, but some kind of 'resultant-event' or 'concomitant-event' θ-role to the whole NP_2 XP-string. What is frequently adduced as evidence in favour of the analysis of (135) is the existence of resultative sentences such as *The joggers ran the pavement thin* or *He laughed himself silly*, where the NP_2 cannot be a direct-object argument of the main verb in isolation (**The joggers ran the pavement*; **He laughed himself*) (Hoekstra 1988: 116-7, 1992: 150-1; Staudinger 1996: 180-1; Wilder 1994: 222).[94]

The main problem with what Carrier and Randall have dubbed the "binary SC-analysis" of sentences (135b, c) (1992: 175) is overgeneration. If SCs can denote states of affairs that result from the verb's action or are concomitant with the event denoted by the verb, it is not clear why some SC-complements are permissible while others are not:

(136) a. *John painted [$_{SC}$ the door sticky]. (ROS: 73)
b. *John ate [$_{SC}$ the meat delicious]. (ROS: 100)

Similarly, this analysis forces us to allow complement clauses for verbs that have traditionally been analysed as intransitive (*laugh* [$_{SC}$ *oneself silly*]) or transitive requiring an object NP (*drink* [$_{SC}$ *the tea hot*]) as well (Rivière 1982: 686), without, however, proposing a convincing semantic relation between the main-verb event and the SC-event. Some rather technical solutions have been put forward to tackle these problems. For resultative sentences, Hoekstra proposes that the final temporal slice t_n of the main-verb event can be identified with the resultative event by θ-marking; while an inherently bounded event such as that denoted by *kill* θ-marks t_n itself, t_n is not θ-marked by an unbounded activity verb like *drink*. Here t_n may be θ-marked by being bound to an SC-event that denotes a state of affairs holding at the end of the drinking event (e.g. *John drank* [$_{SC}$ *himself stupid*]) (Guéron and Hoekstra 1995:101; Hoekstra 1992: 161-2). Hoekstra expands on his account by suggesting that NP-objects in sentences such as *John ate the cake* are also SCs underlyingly ('John ate the cake, with the result that the cake was gone at the end of the event'), which bind t_n of the matrix clause (1992: 163). If this

[94] While the transitive verb *paint* can be taken to assign Case to the subject of the SC in *John painted* [*the door red*], things are little bit more complicated with intransitive verbs. It must be assumed that an intransitive verb such as *run* potentially has the ability to Case-mark a postverbal NP, even if this NP can never be its thematic argument (Rothstein 1992: 127).

proposal can add weight to the binary SC-hypothesis is questionable, however: to classify a verbal event as inherently bounded or unbounded is a very tricky and often impossible business (see 9.2.1); moreover, it is not clear how an inherently unbounded predicate can have a final temporal slice at all (Goldberg 1995: 157).

The binary SC-hypothesis for resultative and depictive sentences is unimplementable for other reasons as well. A matrix verb such as *paint* assigns the same θ-role to a postverbal NP no matter if an XP is present or not. As Carrier and Randall have shown, the sentence **The bears frightened the campground empty* is ungrammatical because the NP_2 *the campground* goes against the selectional restrictions imposed by the main verb (1992: 187-8). Even in a sentence such as *John drank himself into a stupor*, it is not clear that the main verb does not subcategorise for the NP_2 *himself*. As Bowers has observed, the parallel sentence **Mary drank Bill into a stupor* is ungrammatical, suggesting that the main verb imposes restrictions on the postverbal NP; under the binary SC-account, the main verb would subcategorise for the subject of a complement clause, an otherwise unattested fact (1993: 621-2). Furthermore, if a verb assigns a resultative or concomitant θ-role, there is no way of combining the meanings of the main and small clauses: why does *John painted the door red* by necessity imply 'John painted the door, and the door became red as a result' and does not mean 'John was involved in the activity of painting (something), thereby causing, among other things, the door to become red' as the binary-SC analysis would suggest?

The binary SC-hypothesis is not the dominant mode of thinking on resultative and depictive patterns, though. Most SC-theoreticians do not provide a uniform analysis for all predicative NP_2 XP-strings. They argue that since the sentences *John painted the door red* and *John ate the meat hot* entail 'John painted the door' and 'John ate the meat', respectively, the postverbal NPs should be analysed as direct objects (Aarts 1992: 48-9; Rothstein 1995: 31). Still, Aarts does not wish to revert to a descriptive analysis where NP_2 is a direct object and XP is an additional complement or adjunct because this could not explain the subject/predicate relationship between the postverbal phrases *the door* and *red* or *the meat* and *hot*. Instead, he propounds a modified SC-analysis for resultative and depictive verbs:

(137) $[_{VP}\ [_{VP}\ V\ NP_i]\ [_{SC}\ PRO_i\ XP]]$ (from Aarts 1992: 67)

In this representation, the NP adjacent to V is assigned a θ-role by the matrix verb and is therefore its direct object. The SC is not an argument of the verb, but an adjunct of the minimal VP, creating another VP-segment. The subject of the SC contains the empty pronominal anaphor PRO, which is co-indexed with the direct object and consequently controlled by it (Aarts

1992: 67, 1997: 336; Chomsky 1981: 110-1).[95] On the basis of this analysis, *the door* in (135b) would be the direct-object argument of *paint* and the VP *painted the door* would be modified by an adjunct SC, the subject of which is co-referential with *the door* and the predicate of which is *red*. The representation of (137) strictly observes the Theta-Criterion: the direct object does not receive two θ-roles, one from the main verb and one from the SC-predicate, but is assigned its unique θ-role by the main verb; the subject θ-role of the SC-predicate is assigned to PRO. The co-indexing mechanism guarantees that the direct-object NP and PRO have the same referent. With regard to special cases such as *John walked his shoes threadbare*, proponents of the control analysis are more conservative and suggest a binary structure, with the main verb *walked* selecting for the SC *his shoes threadbare*; a control-structure seems to be excluded because the postverbal NP is not semantically selected by the matrix verb (Carrier and Randall 1992: 210; Levin and Rappaport-Hovav 2001: 769; Rothstein 1992: 127; Staudinger 1996: 179). On the model of the traditional analysis of control and ECM-infinitives (*I persuaded him*$_i$ [PRO$_i$ *to go*] vs. *I expect* [*him to come*]), Wechsler draws a distinction between 'control resultatives', where NP$_2$ is a direct object and controls the PRO-subject of the SC, and 'ECM resultatives', where NP$_2$ is not a direct object of the main verb but exclusively the subject of the SC (1997: 309).[96] Like the binary SC-hypothesis, the ECM-analysis cannot explain the link between the main-clause event and the SC-event, though.

The adjunct analysis of control-SCs runs headlong into the same obstacles as the adjunct analysis offered in descriptive accounts. If XP is not selected by the verb, it is difficult to account for constraints such as **The waitress wiped the table stained* (Carrier and Randall 1992: 183-4). There are only two conceivable solutions to this dilemma: one is to uphold the adjunct analysis and to appeal to some vague "extra-grammatical principles" filtering out ungram-

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[95] The PRO-theorem requires PRO to appear in an ungoverned position; PRO is thus in complementary distribution with overt NPs that must appear in positions governed by a Case-assigner (Stowell 1983: 287). More recent theories argue that PRO must also be Case-marked so that it can become visible for theta-assignment (Haegeman and Guéron 1999: 505; Martin 2002: 144). In order to account for the complementary distribution of PRO and NPs in this revised version of Case, generative grammarians speculate that PRO is assigned minimal or null Case, which is not sufficient for overt NPs (Cook and Newson 1996: 337; Haegeman and Guéron 1999: 403). Minimal Case can be assigned by non-finite I; if SCs are taken to contain a non-finite I-system, PRO can be argued to receive minimal Case in (137).

[96] The distinction of ECM-resultatives and control-resultatives has led to some technical problems, though. In order for the subject NP of the ECM-resultative *The joggers ran **their shoes** threadbare* to receive Case, it must be exceptionally governed by the matrix verb, and in order to be governed by the matrix verb, the SC [*their shoes threadbare*] must be a θ-marked complement of *ran* (Carrier and Randall 1992: 210-1). The PRO-subject of a control-resultative such as *John painted the door*$_i$ **PRO**$_i$ *red* or *John ate the meat*$_i$ **PRO**$_i$ *raw*, on the other hand, must be ungoverned, i.e. the SCs [PRO *red*] and [PRO *raw*] must be adjuncts of VP (Aarts 1992: 50; Staudinger 1996: 217; Stowell 1983: 305). The semantically unconvincing conclusion that ECM-resultatives are complements and control-resultatives are adjuncts therefore throws a wrench into this proposal.

matical sentences (Aarts 1992: 62) — as Aart's review of the largely unsuccessful attempts to formulate such general semantic or pragmatic constraints shows, however, these restrictions would be of a highly volatile nature (1992: 59-63). The other alternative is to argue that at least resultative constructions require a complement SC (Stowell 1983: 306)[97]; such a complement-proposal for resultatives is put forward by some descriptive grammarians as well. To say that depictive XPs are adjuncts is too simplistic as well, though: the adjunct-complement problem is thrown into particular relief by sentences such as *I described Mary as an intelligent woman*: Aarts thinks that the NP_2 is a direct object here (cf. *I described Mary*), but the putative SC [PRO_i *as an intelligent woman*] does not seem to be an adjunct as in *eat*-type sentences, but a second postverbal complement because it seems to be semantically selected by the main verb *described* (Aarts 1992: 116-8, 1995: 81; similarly, Napoli 1989: 122).[98] The complement criteria 'obligatoriness' and 'semantic selection' are opportunistically torn apart here as in comparable suggestions in descriptive grammar (for a non-discrete analysis of sentences with *describe*-type verbs, see 11.2.4).

History repeats itself in various guises: the SC-theoreticians who have rebuffed descriptive analyses for their many inconsistencies become entangled in exactly the same complement/adjunct debate as the one depicted for descriptive grammars in 4.1.4. This is not surprising because discrete notions such as 'complement' or 'adjunct' are bound to be stumbling blocks for any syntactic framework:

> The distinction between complements and adjuncts is a highly vexed distinction, for several reasons, one of which is that no diagnostic criteria have emerged that will reliably distinguish adjuncts from complements in all cases — too many examples seem to "fall into the crack" between the two categories, no matter how theorists wrestle with them. (Dowty 2000: 53)

What is even more difficult to tolerate than the problems of definition is that the complement/adjunct distinction does not contribute very much to elucidating the reasons for the semantic differences between the secondary-predicate constructions of (135).

The present chapter has amply illustrated that SC-theory is not primarily based on empirical, but theoretical arguments: "[P]ublications on SCs tend to focus very heavily upon theory-internal assumptions ..., with invented sentences used as vehicles for highly abstract consid-

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[97] Stowell opts for a solution where NP_2 is a direct-object argument and [PRO XP] a second subcategorized postverbal argument. He then has to provide some means to guarantee that PRO can be ungoverned in a subcategorized position (1983: 306-7). Confronted with the same problem, Hornstein and Lightfoot have proposed that PRO may be governed in some environments (1987: 26), a suggestion that has not caught on, however.

[98] Aarts attempts to protect the PRO-subject in the SC-complement from being governed by the matrix verb by suggesting that the SC is a CP and thus opaque to outside government here, while other SCs are IPs and thus transparent to outside government (1992: 117-8). A distinction between IP-SCs and CP-SCs is purely stipulative, though, and has become irrelevant in the CP-stage of SC-theory.

erations" (Schneider 1997: 36). None of the constituency and subjecthood-tests suggested by adherents of SCs stands up to closer empirical scrutiny (even if special rules can always be invoked to patch things up in generative accounts), and the attempts to integrate SCs into the framework of generative grammar are predominantly propelled by the necessity to satisfy theoretical principles such as the Theta-Criterion, the Projection Principle, and the binary-branching requirement. As the gamut of views on the categorial status of SCs shows, NP_2 XP-strings can only be specified as clauses if their underlying structure is taken to differ substantially from their surface appearance — which also implies that such proposals are difficult, if not impossible, to test empirically. Similarly, the empirically observed non-constituency behaviour of the NP_2 XP-string and the direct-object characteristics of NP_2 can only be accounted for if they are explained away opportunistically as surface-structure reflexes of theoretical principles such as Case Theory.

Constructs with such tenuous claims to reality as SCs should be excised from the grammar. I therefore fully agree with Pullum, who claims that "if you believe in small clauses, you probably eat steak with a spoon" (1986: 411).

6. Challenging complex-predicate analyses of secondary-predicate constructions

6.1 Complex-predicate analyses in early descriptive and generative studies

Both the complex-transitive and the small-clause analysis implement important insights at a cost: a complex-transitive analysis adequately treats NP_2 and XP as two separate constituents, but it cannot account convincingly for the subject/predicate relationship holding between them; an SC analysis, on the other hand, neatly explains the predicative relation, but is unable to reveal any clausal structure underlying NP_2 and XP. There is another way of analysing the syntax of secondary-predicate constructions, which holds out the promise of rectifying the defects of both theories. If the matrix verb and XP are assumed to form a complex predicate which selects NP_2 as its direct-object argument, not only is the predicative relationship between NP_2 and XP trivially accounted for, but these postverbal phrases also automatically fall out as two separate constituents, with XP forming part of a complex predicate and NP_2 acting as the direct object.

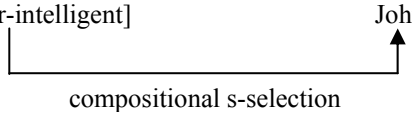
Complex-predicate analyses have been argued for by descriptive grammarians from time to time. House and Harman, for example, acknowledge that in a sentence such as "*He appointed Harris manager*", the NP *manager* both "completes the action expressed in the verb and refers to the direct object" (1950: 250). They suggest analysing *manager* as part of a complex verb "*appointed-manager*", which as a whole subcategorises for the direct object *Harris* (1950: 251). In some instances, they maintain, such complex predicates can be replaced with a synonymous simple verb: in the sentence "*The sunlight made the apple red*", for instance, "*made-red* is about the equivalent of *reddened*" (1950: 250). Visser essentially shares the same view when he claims that the pronoun *him* in the sentence *I made him happy* is not the object of the verb *made* alone, but of the complex predicate *made-happy* (1963: 552). A similar analysis has been proposed, among others, by Pence and Emery (1963: 50). (138) provides some notational representations of complex-predicate analyses as offered in descriptive grammars.

(138) a. We | thought/safe and sound | the boat. (from House and Harman 1950: 253)
b. I [made happy]: him. (from Visser 1963: 552)
c. He washed + clean the window. (from Pence and Emery 1963: 50)

A complex-predicate analysis of secondary-predicate constructions has also been brought up time and again by Chomsky in a generative framework. Interestingly, Chomsky considered an equivalent of the modern small-clause analysis as early as in *The Logical Structure of Lin-*

guistic Theory, but rejected it for technical reasons (1975: 479-80). As an alternative, he reasoned that *consider a fool* in the sentence "*They consider John a fool*" could be a "compound verb" on a par with phrasal verbs (1975: 479-80), a solution he had already adopted in *Syntactic Structures* (1957: 76). Similarly, in *Knowledge of Language* Chomsky tentatively suggests that there may be "compositional s-selection" of the direct object NP_2 by the main verb and the XP (139) (1986a: 91-2).

(139) We [consider-intelligent] John



compositional s-selection

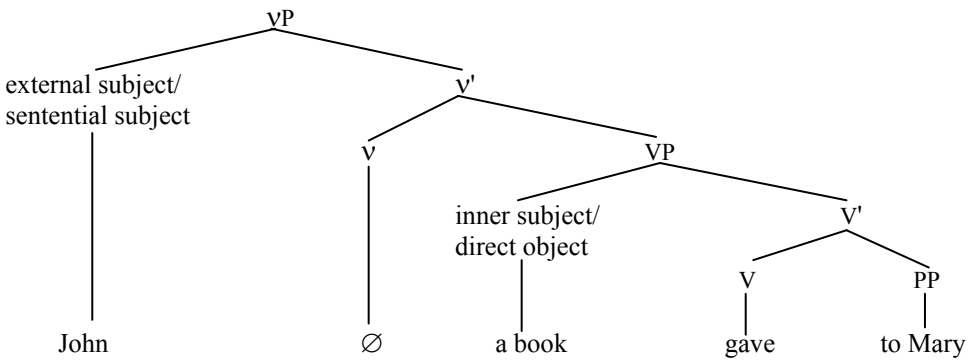
While these early proposals in descriptive and generative grammars are very speculative in nature and have remained largely programmatic, the complex-predicate analysis has been more rigidly formalised in two syntactic frameworks: contemporary generative grammar and Categorial Grammar.

6.2 Complex-predicate analyses in modern generative grammar

Although a *de facto* consensus has emerged in modern generative grammar that NP_2 and XP form an SC, a small parade of generative grammarians has attempted to make a case for complex-predicate analyses as a viable alternative to SC-theory by putting Chomsky's early suggestions on a more formal footing. Complex-predicate analyses have achieved some prominence in generative grammar after Larson's (1988) influential proposals concerning double-object constructions. The two postverbal objects of the ditransitive construction (cf. *John gave **Mary the book***) and of the prepositional or indirect-object construction (cf. *John gave **the book to Mary***) have traditionally been analysed as complements of the verb *give* and consequently as structurally on a par. Larson has challenged this standard view by proposing that in the indirect-object construction, the verb *give* and the indirect object *to Mary* form a complex constituent, which selects the direct object *the book* as a whole. He has effected this analysis by distinguishing between two kinds of theta-assignment: the matrix verb takes the indirect object as its complement and directly θ-marks it; the resulting phrase is reanalysed as a complex lexical item which then indirectly θ-marks the direct object. Viewed from a slightly different angle, the complex predicate *give-to-Mary* takes the direct object *a book* as its 'subject' argument and thus forms a clause-like subject/predicate structure with it: '[*a book*] [*give-to-Mary*]' (Larson 1988: 342), roughly meaning 'x (= *a book*) come to be under control of y (= *give-to-Mary*)' (Hale and Keyser 1992: 109). The sentential or external subject *John* is then predicated of the clause-like structure *a book give-to-Mary* with the help of an abstract causative verb, usually formalised as the functional head 'v' (cf. footnote 75; Grewendorf 2002: 54;

Larson 1988: 342). The following tree diagram illustrates the fairly complex underlying structure that is credited to indirect-object constructions in Larson's account:[99]

(140)



Larson himself suggested that this D-structure representation for indirect object constructions could be extended to secondary-predicate constructions such as *Mary considers John foolish* as well (1988: 349). In this view, the matrix verb *consider* assigns a direct θ-role to its sister XP in V'. The V' constituent is reanalysed as a complex predicate (Larson 1988: 348-9), which then, as a whole, discharges an indirect θ-role to the direct object NP_2 in the specifier position of VP. The direct object would thus constitute the inner 'subject' of the clause-like configuration [*John*] [*considers-foolish*]. This subject/predicate structure is then predicated of the sentential or external subject *Mary*:

(141) **[**$_{νP}$ Mary [$_{ν'}$ ν [$_{VP}$ John [$_{V'}$ considers foolish]]]**]**.

This D-structure representation of a secondary-predicate construction differs crucially from the corresponding surface structure, where NP_2 is placed between the matrix verb and XP. We will look at how this problem is tackled in generative accounts in 6.4.

The Larsonian analysis of secondary-predicate constructions has been picked up by several linguists in slightly modified forms. Contreras, for instance, opts for a combination of the small-clause and complex-predicate analyses: if XP is realised by an AP, she theorises, NP_2 and AP form a small clause, but if XP is realised by an NP, the matrix verb and NP combine as a complex predicate (1995: 136). The argument she adduces for this split analysis of secondary-

[99] Larson hypothesises that the ditransitive construction *John gave Mary the book* can be derived from the D-structure representation of the indirect-object construction by some sort of 'passive' transformation, where the object of the clause-like VP *a book gave to Mary* — (*to*) *Mary* — becomes the derived inner 'subject', and the original inner 'subject', *a book*, becomes an adjunct of V'. We thus get the 'passive' verb phrase [$_{VP}$ *Mary*$_i$ [$_{V'}$ *a book* [$_{V'}$ *gave* t_i], which, after the main verb has been moved to ν, results in the surface structure *gave Mary a book* (Larson 1988: 351-3). While this transformational account has been readily seized on by generativists, it has come under heavy attack from functionalist and cognitive grammarians because it blurs the semantic distinctions between the ditransitive construction and the indirect-object construction (for a description of these distinctions see, e.g., Lee 2001: 74-5; Wierzbicka 1988: 359-87).

predicate constructions is rather tenuous, though. She makes the claim that only SCs headed by APs constitute binding domains (142a), while structures with NPs in the XP-position are transparent for the purposes of binding (142b) (1995: 136). As has been shown in 5.2.2, however, it is tricky to use binding evidence for the demarcation of structural domains: *contra* Contrera's assumptions, a reflexive in AP can indeed be bound by the matrix subject (142c), and a reflexive in NP can be bound by NP_2 (142d).

(142) a. We$*_i$ consider **Mary**$_i$ proud of **herself**$_i$. (from Contreras 1995: 136)
b. **They**$_i$ consider John$*_i$ **each other's**$_i$ friend. (from Contreras 1995: 136)
c. **John**$_i$ considers Mary$*_i$ superior to **himself**$_i$. (ROS: 20)
d. John$*_i$ considers **Mary**$_i$ a danger to **herself**$_i$. (ROS: 0)

The most elaborate analysis of secondary-predicate constructions in the complex-predicate paradigm to date has been submitted by Rapoport (1993, 1995). Her main argument for analysing the matrix verb and XP as a complex predicate is that the semantics of the main verb are not complete enough for independent predication and that, as a consequence, "[t]he second predicate is crucial to the interpretation of the action; the description of the action is not complete, or possible, without the participation of this second predicate phrase" (1993: 160). In contrast to Larson, she does not analyse XP as a complement of the main verb, but as a verb-modifier, and goes on to claim that the position of sister to the verb is, as a rule, not a complement position, but one that "modifies the action (or state or process) of the verb; it is part of the description of the action, narrowing that description" (1995: 160).[100] After the verb has incorporated its modifier XP, which is situated in its sister position, V' can act as a single complex predicate, assigning a combined θ-role to the direct object NP_2 in [SPEC,VP] as in Larson's account (1993: 165, 168, 1995: 161). Unlike Contreras, Rapoport does not make a distinction between APs and NPs in the XP-position; however, she does assume that not all secondary-predicate constructions should be treated uniformly. While she thinks that sentences with qualifying and resultative verbs lend themselves neatly to a complex-predicate analysis because the respective XPs complete the description of the verbs' events (*Mary* ***considers-foolish*** *John*; *The waitress* ***wiped-clean*** *the table*) (1993: 164, 167), she posits a ternary analysis for

[100] Rapoport thinks that the verb-modifier position can only be occupied by what she calls 'non-specific' elements such as adverbials or adjectives, but not, for example, by referential noun phrases. The way she effects the distinction between non-specific noun phrases, which can act as verb-modifiers, and specific ones, which can only serve as the subject or object arguments of a verb, is very elaborate, but in the end not particularly convincing (1995: 154-61). Similar to Stowell, she assumes a distinction between specific noun phrases or complements as DPs and non-specific noun phrases or verb-modifiers as NPs (1995: 166; cf. 5.3.2) — a distinction that has not worked in Stowell's account and does not work in hers, either. Moreover, it is doubtful that "anything that can narrow or complete the verb's description of an event" (Rapoport 1995: 171) should receive uniform treatment as a verb-modifier; Rapoport would, for instance, analyse the highlighted elements in *hit the ball* ***hard***, *build* ***a house***, *consider sb.* ***a genius*** as performing the same function of modifying the verb (1995: 168-9).

depictive constructions, arguing that the XPs do not specify the description of the verb's event here (*John **ate** the steak **hot***) (1993: 169-70; see 7.2).

A third way of combining the complex-transitive analysis with existing analyses has been proposed by Stowell. He maintains that NP_2 XP-strings form small clauses at D- and S-structure, but are re-constructed to complex predicates at LF (1991a: 185). The main motivation for this suggestion resides in scope effects (Stowell 1991a: 199-200), which can be illustrated with the sentences in (143). The existential quantifier *someone* in (143a) allows only a wide-scope construal over the matrix clause (143a'), but its scope cannot be construed narrowly as extending over the putative SC only (143a''). This differs from the scope-relations in *that*-clauses (143b), where the scope of the quantifier is restricted to the subordinate clause (143b') and cannot extend over the main clause (143b'').[101]

(143) a. Mary considers someone angry at John.
a'. = ∃x [Mary considers x angry at John].
a''. ≠ Mary considers ∃x [x is angry at John].
b. Mary believes that someone is angry at John.
b'. Mary believes ∃x [x is angry at John].
b''. ≠ ∃x [Mary believes x is angry at John].

Stowell correctly concludes that "the unavailability of the narrow scope construal must hinge on the exclusion of the small clause as a possible domain of quantification" (1991a: 201). Instead of giving up the SC-analysis as such, however, he retains this analysis for the D- and S-structure representations of *consider*-type sentences, but speculates that the SC is eliminated at LF because the predicative head X adjoins to and incorporates into the main verb, so that they form a complex predicate at this level (1991a: 185, 201; see also Basilico 2003: 18; Endo 1991: 63-4; Staudinger 1996: 56). Consequently, a quantifier can and must have scope over the matrix clause at LF since the clause-union effect of the restructuring process has made the SC unavailable as a scope domain at this level (1991a: 202). Stowell's implementation of SC-restructuring is purely *ad hoc* and based on many technicalities (1991: 208-11); an alternative explanation for the scope phenomena illustrated in (143) will be provided in section 11.3.

The complex-predicate analysis plays a minor role in generative grammar and is, as we have seen, usually combined with SC-analyses in one way or the other. Complex predicates

[101] The notation used here is derived from the formal semantic representation of sentences and helps to clearly disambiguate the different scope properties of *someone* (see, e.g., Cann 1993: 151-4). *Someone* is a free variable because, unlike an individual constant such as *John* or *the book*, it does not have a fixed interpretation. A free variable must be bound by an operator/quantifier, in this case the existential operator ∃ (the restriction of the range of x to human beings is presupposed). The operator is written to the left of the bracketed expression over which it has scope. The relative placement of the operator, its scope position, thus shows whether it has scope over the whole sentence as in (143a') and (143b'') or only over an embedded clause to its right as in (143a'') and (143b').

are, however, the predominant way of analysing secondary-predicate constructions in Categorial Grammar.

6.3 Complex-predicate analyses in Categorial Grammar

Before we can look at a typical Categorial Grammar representation of a *consider*-type sentence, it is helpful to review some fundamental notions of formal semantics and Categorial Grammar first.

Disappointed by Chomsky's heavy focus on syntax and spurred by Richard Montague's (1930-1971) groundbreaking studies on the logic of natural languages, linguists and logicians have for the first time seriously attempted to apply formal semantic techniques to interpreting the meaning of a natural language such as English (Cann 1993: 2). Formal semantics is a paradigm case of linguistic discreteness because it rigorously adheres to the 'Principle of Compositionality', which stipulates that "[t]he meaning of an expression is a ... function of the meaning of its parts and the way they are put together" (Cann 1993: 3; see also Bach 1979: 527). More consistently than any other linguistic theory, formal semantics aims to pair syntactic expressions with their respective semantics at every point in the derivation of a complex expression (Chierchia and Turner 1988: 277; Dowty 2000: 55). The 'Rule-to-rule hypothesis' requires that "[f]or each syntactic rule there is a corresponding semantic rule" (Cann 1993: 5). As Bach puts it, "Chomsky's Thesis" was that natural languages like English "can be described as a formal system", while "Montague's Thesis" was that they "can be described as interpreted formal systems" (1989: 7-8).

The grammatical framework that is most frequently employed to derive sentences in formal-semantics analyses is Categorial Grammar, which follows rather straightforward syntactic principles and lends itself more easily to a consistent pairing of syntactic phrases with semantic expressions than the more complex syntactic theories developed by generative grammarians. The basic principles of syntactic derivation in Categorial Grammar are rather simple. Linguistic expressions are built up progressively via 'functional application' (Bach 1979: 516; Dowty 2000: 55): two syntactic constituents combine to form a third; in the associated semantics, one expression, the functor, is applied to another expression, its argument, to derive a more complex semantic expression. In other words, "the syntactic and the semantic rules come together as a package, and the unmarked package is a binary phrase structure rule with functional application semantics" (Jacobson 1987: 44). The rule of functional application is usually formalised in the following way: a functor is an expression that consists of an ordered pair of types <a, b>; the first element (a), or input type, indicates the type of argument the functor must combine with, and the second element (b), or output type, shows the type of

the complex expression that results after functional application has taken place. Functional application thus cancels the type of the argument with the first type of the function, and the type of the result expression is indicated by the uncancelled second type of the function. The result expression can itself be a function that has to combine with another argument to derive an even more complex expression (Cann 1993: 85-6). (144) illustrates a two-stage binary derivation on the basis of functional application:

(144) a. <a,<b,c>> + a ⇒ <b,c>
b. <b, c> + b ⇒ c

The syntactic categories of Categorial Grammar are also defined in terms of their combinatorial requirements with other categories to produce a more complex syntactic category. Since syntax, unlike logical semantics, is a directional system, it is important to distinguish if the argument is concatenated to the right or left of its functor: a category of the form X/Y (with the slash leaning to the right) combines with a category Y to its right to form a phrase of category X; conversely, a category X\Y (with the slash leaning to the left) combines with a category X on its left to form an expression of category Y (Bach 1979: 516; Dowty 2000: 55).

(145) illustrates how the sentence *Mary considers John a fool* is progressively built up in a Categorial Grammar framework. According to the Rule-to-rule hypothesis, each syntactic rule is mechanically matched with a semantic translation rule; the primed lines therefore state the corresponding semantic derivations.[102] The verb *consider* with the expression ((NP\S)/NP)/PREDP combines with a predicative phrase PREDP to its right to give a transitive verb phrase (NP\S)/NP (145a).[103] This transitive verb phrase consists of the complex predicate *consider a fool*, which is treated as syntactically equivalent to a simple transitive verb such as *love* (Bach 1979: 517-8). The transitive verb phrase then combines with an NP to its right to produce a verb phrase NP\S (145b).[104] In the final step, an NP is concatenated to the left of the verb phrase NP\S to yield the whole sentence S (145c).

[102] The superscript prime (') following the words and phrases in the derivation signifies the logical semantic expression that translates an English expression (Cann 1993: 33); it thus indicates that we are not dealing with actual words in the object language English, but with an equivalent expression in the logical semantic metalanguage (Cann 1993: 35).

[103] A transitive verb phrase (NP\S)/NP is a phrase that first requires an NP to its right and then an NP to its left. In descriptive terminology, a transitive verb phrase corresponds to a bivalent or transitive verb that requires a direct-object argument and a subject argument.

[104] A verb phrase NP\S is a phrase that requires an NP to its left. In descriptive terminology, a verb phrase corresponds to a monovalent or intransitive verb that requires a subject argument.

(145) a. ((NP\S)/NP)/PREDP + PREDP ⇒ (NP\S)/NP
a'. *consider'* + *a-fool'* ⇒ (*consider' a-fool'*)
b. (NP\S)/NP + NP ⇒ NP\S
b' (*consider' a-fool'*) + *john'* ⇒ ((*consider' a-fool'*) *john'*)
c. NP + NP\S ⇒ S
c'. *mary'* + ((*consider' a-fool'*) *john'*) ⇒ (*mary'* ((*consider' a-fool'*) *john'*))

Since we are chiefly concerned with the first two steps of the derivation, we can economise by substituting the expression NP\S with VP and ignore the fact that a verb phrase is also a functor that requires an NP to form a sentence. (146) provides the simplified version of the derivation of the VP *consider John a fool*:

(146) a. (VP/NP)/PREDP + PREDP ⇒ VP/NP
a'. *consider'* + *a-fool'* ⇒ (*consider' a-fool'*)
b. VP/NP + NP ⇒ VP
b'. (*consider' a-fool'*) + *john'* ⇒ ((*consider' a-fool'*) *john'*)

As with the generative complex-predicate analyses, the resultant string *consider a fool John* deviates from the empirically observed word order of the sentence. We will look at attempts to rectify this situation within the Categorial Grammar framework in the following.

6.4 Evidence for complex predicates and attempts to cope with distributional mismatches

The complex-predicate analysis gives the impression of being founded almost exclusively on conceptual and theoretical arguments because the empirical evidence given for it is rather paltry. To begin with, the additional structure that is assumed to exist between the main verb and XP is sometimes claimed to be reflected in several constructions: in a passive, the two parts of the postulated complex predicate show up as a continuous syntactic string (147a) (Chomsky 1975: 481; Jacobson 1987: 32); the same observation holds true for questions (147b) and the so-called 'Heavy NP-shift' construction (147c) (Jacobson 1987: 32; Larson 1988: 349).

(147) a. [T]he daughter's education is **considered irrelevant** (BNC A6V: 2178).
b. "What do you **consider a fair price**, Madame?" (BNC FSF: 2457)
c. I **consider foolish** John and all his little children.

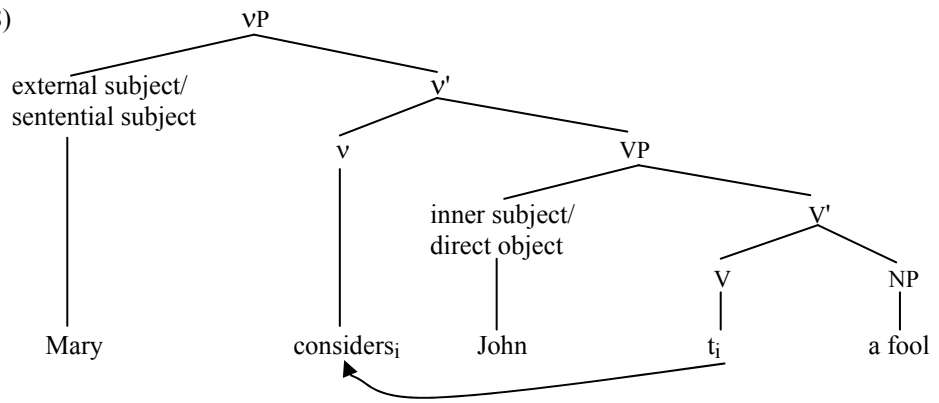
Moreover, since a complex-predicate analysis presupposes that NP_2 is a direct object, it can easily account for such empirical direct-object properties as accusative case marking and the ability to serve as the subject in passives. These surface direct-object properties have been responsible for making Chomsky question the SC-analysis and ponder a complex-predicate analysis in the first place (1975: 481-2, 1986a: 91). A complex-predicate analysis also has the conceptual advantage of bringing the two predicative elements contained in the sentence, the matrix verb and XP, together in one complex predicative constituent.

There are, however, several serious complications to the complex-predicate picture. First of all, it is not clear where complex predicates should be formed. To assume that such strings as *consider-foolish* or *wipe-clean* are created in the lexicon by some sort of lexical rule (e.g. Simpson 1983: 143) strikes one as counter-intuitive because this would expand the lexicon beyond all measure (Aarts 1992: 49; Staudinger 1996: 54). Complex predicates must thus be argued to be constructed in the syntax, as is done by both Larsonian and Categorial Grammar analyses: after the verb and XP have been combined by some syntactic process, they are assumed to be reanalysed as a complex lexical category that can assign a single theta-role to the direct object (Larson 1988: 349; Rapoport 1995: 161). This is where the semantic problems start, however, because it is anything but obvious that a string such as *wipe clean* constitutes a bivalent semantic unit that as a whole selects a subject argument *The waitress* and a direct-object argument *the table*. Carrier and Randall rightly level criticism at the idea of a "combo-role" that would have to be claimed to be assigned by the complex predicate to the direct-object argument (1992: 231). In the sentence *The waitress wiped the table clean*, the argument *the table* is both the object of the subject's action and the subject of the resultant property *clean*, and it is not transparent how these two semantic relations could be conflated into one complex thematic role. What is more, we would have to exert considerable pressure on the notion 'complex predicate' if we wanted to include sentences such as *John drank himself crazy* or *John ate the meat hot* in such an account, because it would be difficult to impute coherent semantic content to the putative complex predicates *drink crazy* or *eat hot*.

All of this appears to be some strain on the claim that the matrix verb and XP form a complex predicate. The main problem with the complex-predicate hypothesis, however, is that the matrix verb and XP do not form a syntactic constituent at surface structure in most unmarked constructions. Passives, questions, and 'Heavy NP-shift' constructions are pragmatically marked structures: in the passive, the 'direct object' NP occupies the sentential subject position because the passive exceptionally foregrounds the 'direct object' argument relative to the 'subject' argument; in a *wh*-question, the 'direct object' occupies the clause-initial position because it serves as the topic of the sentence, and in the 'Heavy NP-shift' structure the 'direct object' is placed towards the end of the sentence because it is long and informationally salient. To argue that these structures reflect a more basic word order of secondary-predicate constructions (e.g. Larson 1988: 349; Jacobson 1987: 32) is therefore rather far-fetched. Adherents of the complex-predicate analysis, who claim that the verb and XP do form a constituent at some more abstract syntactic level, are forced to argue that they are discontinuous at surface structure for independent syntactic reasons.

Generative grammarians arrive at the right word order by various circuitous transformational paths. In Chomsky's early proposals, an obligatory transformational separation rule T_{sep}^{ob} applies to a string such as *Mary — considers a fool — John* and has the effect of interchanging the XP-part of the complex predicate and the direct object, yielding the well-formed surface expression *Mary — considers — John — a fool* (1957: 76-7). Such mechanical, purely descriptive transformations are no longer acceptable in contemporary generative accounts, of course. The transformation engineered by Larsonian analyses, which is the same as that applied to the indirect-object construction, does not carry much greater conviction, however. It is argued that the main verb raises from its D-structure position in V to the functional projection v in order to pick up the causative semantics associated with this functional head and to be able to assign Case to the direct object or inner subject (148) (Contreras 1995: 141-2; Grewendorf 2002: 54-5; Hale and Keyser 1992: 109; Larson 1988: 335; Rapoport 1993: 178, footnote 4).

(148)



Both the D-structure representation and the above transformation to obtain the right surface word order come over as stipulative and counter-intuitive. This is not surprising if one considers that Larson's analysis of the indirect-object construction, which is used as a model for the complex-predicate analysis, rests on very shaky empirical foundations itself.[105] This is not the place to suggest an alternative analysis of double-object constructions, but it is clear that a Larsonian analysis of secondary-predicate constructions creates distributional mismatches that can only be resolved opportunistically on different syntactic levels.

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[105] Larson's arguments substantiating the idea that the two postverbal objects are on different structural levels are of a rather dubious nature. Like SC-theoreticians, he uses conjunction data such as *John sent a letter to Mary and a book to Sue* to argue that *a letter to Mary* and *a book to Sue* are constituents, with the verb *sent* having been raised from the two conjuncts to v (1988: 345). An analysis of this sentence as an instance of a pragmatically marked non-constituent conjunction construction could easily challenge this claim, however. Larson also makes much of binding evidence such as *I showed Mary$_i$ to herself$_i$* to contend that *Mary* is the inner subject of the clause-like structure *Mary show to herself* (1988: 336-9). Again, binding evidence constitutes a tenuous basis for structural claims because binding relations may have to be stated in semantic rather than syntactic terms, as has been illustrated in the discussion of small clauses above (cf. 5.2.2).

Similarly, the Categorial Grammar analysis of (146) derives a verb phrase which contains discontinuous constituents, with the direct object being placed between the two elements of the complex predicate making up the transitive verb phrase. The word order of English does not support the assumption that the verb and the predicative phrase together form a transitive verb phrase to the exclusion of NP_2. The question as to how the correct word order can be arrived at consequently arises in Categorial Grammar as well (Jacobson 1987: 28; Kang 1995: 61). There have been several interesting ventures in the Categorial Grammar framework; I will briefly look at three of them.

Jacobson submits a 'verb promotion' analysis that bears many similarities to Larson's transformational account. As in the standard Categorial Grammar derivation above (146), a PREDP first combines with a *consider*-type verb to give a transitive verb phrase made up of a complex predicate (149a, a'). When the transitive verb phrase combines with a direct object NP to yield a VP, the NP is not just concatenated to the right of the transitive verb phrase as in the default case; rather, Jacobson assumes, the verbal part of the transitive verb phrase is promoted to the beginning of the resultant VP by a marked rule of verb promotion (149b) (1987: 44-5), in a similar way that the verb is raised to ν in Larson's account. In the corresponding semantic representation (149b'), the resultant semantic expression is composed of the meanings of three equal elements because the complex predicate has been eliminated at this point (Jacobson 1987: 52).

(149)	a.	(VP/NP)/PREDP	+ PREDP	⇒ VP/NP
	a'.	*consider'*	+ *a-fool'*	⇒ (*consider' a-fool'*)
	b.	VP/NP	+ NP	⇒ VP → V (promoted) NP PREDP
	b'.	(*consider' a-fool'*)	+ *john'*	⇒ *consider' john' a-fool'*

A different explanation for the discontinuity of the complex predicate has been offered by Bach. He assumes that transitive verb phrases that consist of a complex predicate do not simply combine with a direct-object argument by concatenating it to its right, but by inserting it after the lexical verb (1979: 516, 518). This 'Right Wrap'-operation (150) is, like Jacobson's rule of verb promotion, a marked way of combining syntactic expressions; it could be motivated by a requirement that a direct object must be adjacent to a lexical verb (Hoeksema 1991: 702). Unlike the verb-promotion account, the marked rule of Right Wrap does not eliminate the complex predicate but only infixes an element into it.

(150) VP/NP + NP ⇒ VP → V [NP (right wrapped)] PREDP

Still another analysis is submitted by Hoeksema (1991), who thinks that besides ordinary categories, there are categories to be liberated. When such categories, which are notationally enclosed in square brackets, combine with an argument, the expression of the bracketed cate-

gory is not maintained as a constituent. The first step in Hoeksema's derivation of a secondary-predicate construction is identical to the other proposals: a verb such as *consider* combines with a PREDP to give a transitive verb phrase [VP|NP], which is made up of a complex predicate (151a). Since this transitive verb phrase is a bracketed category, its constituents V and PREDP are 'liberated', i.e. not preserved as a complex predicate, when the transitive verb phrase is combined with the direct-object argument NP; all three elements (the verb, the PREDP and the NP) thus become immediate constituents of the VP (151b) (Hoeksema 1991: 666). The word-order facts are handled by an independent mechanism in this account: in contrast to the previous proposals, Hoeksema claims that functional application does not determine the order of the categories; hence the use of | instead of slanted slashes in the syntax and the use of curly brackets indicating an unordered string in the semantics (1991: 666). The order of the elements in the VP is determined by two independent precedence rules instead: first, V precedes (<) all other elements; and second, V immediately precedes (<<) NP (1991: 671). These precedence rules guarantee the right order of the constituents in the syntactic and semantic representations of the VP (151c, c').

(151) a. [VP|NP]|PREDP + PREDP ⇒ [VP|NP]
a'. *consider'* + *a-fool'* ⇒ {*consider' a-fool'*}
b. [VP|NP] + NP ⇒ VP → V PREDP NP
b'. {*consider' a-fool'*} + *john'* ⇒ {*john' consider' a-fool'*}
c. V < X; V << NP ⇒ VP → V NP PREDP
c'. ⇒ (*consider' john' a fool'*)

Whatever their local disagreements about the most adequate formulation of the rule combining a direct object with a complex-predicate transitive verb phrase, all of the above proposals agree that a marked rule of combination can explain the word-order fact that the elements of the complex predicate do not form a constituent in surface syntax. In passives, questions, and 'Heavy NP shift' constructions, on the other hand, the direct object is claimed to have simply been concatenated to the right of the transitive verb phrase by default and no such marked rule as verb promotion, wrapping or liberation has had to apply.

The word-order mismatches necessitated by complex-predicate analyses are thus resolved by rather stipulative transformational rules in generative grammar and idiosyncratic combinatorial rules in Categorial Grammar.[106] These solutions leave themselves open to charges of opportunistic and untestable methods. SC-theories and complex-predicate theories

[106] Kang hypothesises that *consider* should be represented as VP/PREDP/NP in Categorial Grammar, which means that the verb and the PREDP do not form a complex predicate, but that the verb first combines with the direct object NP and then with the PREDP, yielding the right surface word order without any marked rules of combination (1995: 70). It is doubtful, however, that the string [*consider John*] has any more empirical validity than the complex predicate [*consider a fool*] or the SC [*John foolish*].

have reached varied conclusions about the nested constituent structure underlying secondary-predicate constructions. Yet neither the additional structure between NP_2 and XP in small-clause approaches (152a), nor the additional structure between the matrix verb and XP in complex-predicate accounts (152b) can be established empirically and must therefore be defended by theory-internal assumptions instead. If we do not want to posit such phantom structures as 'small clause' or 'complex predicate', we are left with the flat structure in (152c), where the four elements of a secondary-predicate construction are all on the same structural level. This is the only structure that can be revealed empirically, and, pending very good reasons to the contrary, the only structure syntacticians should rely on and work with.

(152) a. [NP_1 V [NP_2 XP]] ?

b. [NP_1 [V XP] NP_2] ?

c. [NP_1 V NP_2 XP]

The problem for a syntactically discrete account is to explain how the elements in (152c) are tied together syntactically and semantically. Descriptive grammars claim that the verb selects the other three phrases as its arguments, but this assumption runs into insuperable difficulties because it cannot explain the semantic subject/predicate relationship holding between NP_2 and XP and forces one to allow a predicate to select another predicate, even in cases where such selection is not particularly convincing (e.g. *John drank his tea hot*). The following chapter will look at one more syntactically discrete analysis of secondary-predicate constructions, which is ternary in nature like the complex-transitive analysis, but tries to avoid the problems created in traditional descriptive accounts.

7. Challenging Predication-theory analyses of secondary-predicate constructions

7.1 Semantic definition of predicative relations in Predication theory

As additional structure between NP_2 and XP or the matrix verb and XP cannot be established empirically, some generative grammarians have looked for new ways to explain the predicative relationship holding between the postverbal phrases of secondary-predicate constructions. Like descriptive grammarians, they presuppose a flat structure for [NP_1 V NP_2 XP]-patterns, but they do not think that the matrix verb simply selects the three other phrases as its arguments. Their alternative proposal, which has been spearheaded by the work of Williams (1980, 1983), has come to be known under the term 'Predication theory'. Williams and his adherents work within a loose version of GB-theory, in which some of the principles that have forced an SC-analysis in mainstream generative grammar have been modified or abandoned.

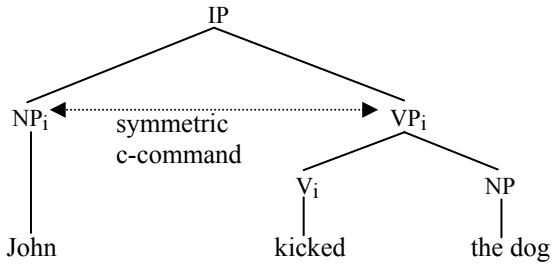
As we have seen in chapter 5.1, the conspiracy of the Theta-Criterion, the Projection Principle and the binary-branching requirement have made the acceptance of SCs virtually inescapable in a strict GB-framework. These principles have turned the notion 'clause' into a primitive of generative grammar because every subject/predicate relationship must now be structurally reflected by a clause, even by a canonical CP in some more recent approaches. The "ruling motto of the SC theory" is therefore that "[a]ll subjects are structural subjects" (Williams 1983: 289), i.e. NP_2, which receives a subject θ-role from XP, must be structurally defined as the subject of a (small) clause. Williams, however, disputes this contention of SC-theory that predicative relationships must invariably be identified with clausal configurations, and "takes the subject-predicate relation to be basic and the notion 'clause' to be derivative" instead (1983: 292). His Predication theory does not only acknowledge predicative relationships that are mirrored by clausal structure, but also predicative relations that are not mediated structurally (1983: 288). While the subject/predicate relation obtaining between the subject NP and the VP of a canonical sentence is thought to be instantiated by a clause, the predicative relation between the postverbal phrases of secondary-predicate constructions is not assumed to be necessarily reflected by syntactic structure (Carrier and Randall 1992: 174; Schein 1995: 63; Williams 1983: 307).

This bold move to divorce semantic relations from syntactic structure in a generative framework means that Williams must devise an alternative way to account for the predicative nexus between NP_2 and XP, a task that descriptive grammars opting for a ternary analysis have

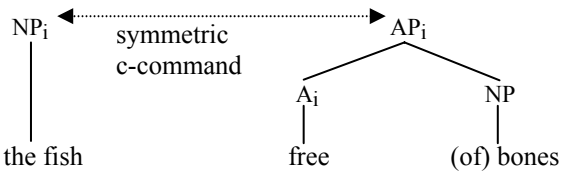
failed to fulfil so far. Several of Williams' ideas are incommensurable with standard GB-notions; most importantly, Williams proposes a non-clausal definition of the terms 'predicative relation' and 'subject'. In his framework, a predicate is an unsaturated grammatical entity that requires a subject expression to make it complete; a subject is defined as the external argument of the predicate, and the predicate and its subject argument are semantically identified by bearing the same index. Williams assumes an additional level of representation, 'Predicate Structure', which is derived from S-structure by a 'Rule of Predication' co-indexing subjects with their respective predicates (1980: 205, 1983: 291-2). The term 'subject' is thus redefined relationally as 'subject of predicate' instead of configurationally as 'subject of clause' (Rothstein 1990: 599).

Since the relation between subject and predicate is no longer characterised in terms of clauses, Williams needs to triangulate the right conditions that can identify an NP as the external argument of a predicate with which it can be co-indexed. He maintains that the subject argument is that NP outside the maximal projection of the predicate that symmetrically c-commands that maximal projection (1980: 205, 1983: 287-8; see also Culicover and Wilkins 1986: 121; Mallén 1992: 5). This configuration is claimed to hold both in full clauses (153a) and between the postverbal phrases of *consider/wipe/eat*-type verbs (153b).[107]

(153) a. $[_{NP}$ John$]_i$ $[_{VP}$ kicked$_i$ the dog$]_i$.



b. (The waitress served) $[_{NP}$ the fish$]_i$ $[_{AP}$ free$_i$ of bones$]_i$.



In (153a), the verb *kicked* assigns its subject θ-role to the NP *John*, which is outside the maximal projection of the verb, VP, and symmetrically c-commands this projection.[108] The direct-

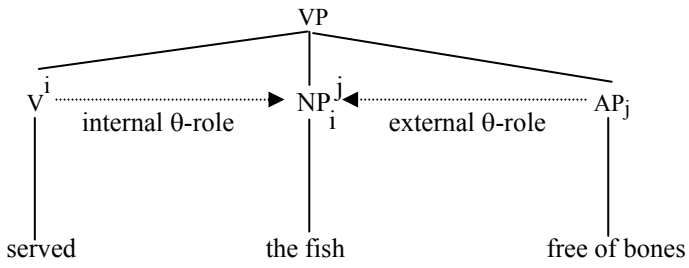
[107] These and the following representations have been simplified for expository purposes: all nodes that are not necessary for the case at hand (e.g. I' and I) are not depicted in the diagrams.

[108] The idea behind the symmetric c-command relation is that the thematic requirements of a predicate (e.g. V or A) are projected to the respective maximal projection (VP and AP), so that the maximal projection itself can be argued to assign a θ-role to the external argument in a symmetric c-command configuration.

object argument *the dog*, on the other hand, is located inside the maximal projection VP and, of course, does not c-command it. The only NP that can therefore be co-indexed with the VP as its subject argument is *John*. In this case, the subject/predicate relation between *John* and the VP is also instantiated by a clause (IP); as a consequence, *John* is both a grammatical and a thematic subject, and the verb is both structurally and thematically a predicate and is therefore often called a 'primary predicate' (Mallén 1992: 5; Napoli 1989: 88). In (153b), the adjective *free* assigns its subject θ-role to the NP *the fish*, which is outside the maximal projection AP and symmetrically c-commands this projection; the NP *bones*, by contrast, is inside the maximal projection AP and therefore not in a c-command relation with it. In this case, the predicative relationship between *the fish* and the AP is not reflected by a (small) clause. *The fish* is consequently not a grammatical, but only a thematic subject; similarly, XP is merely a thematic or 'secondary' predicate (Demonte 1987: 1; Napoli 1989: 89; Rothstein 1995: 29-30).

The analyses propounded by predication theorists necessitate giving up some of the mainstays of standard GB-theory. The NP *the fish* receives a subject or external θ-role from the maximal projection of the adjective, but it structurally functions as the direct object of *served* and also receives a direct object or internal θ-role from this verb (154). In other words, the postverbal NP is assigned θ-roles both from the primary and the secondary predicate at Predicate Structure (Mallén 1992: 4-5), which goes expressly against the Theta-Criterion, which legislates against multiple θ-role assignment to a single NP.

(154)



Proponents of Predication theory trade off the strict thematic requirements of the Theta-Criterion for the more liberal principles of what is variously known as the "restricted Theta Criterion" (Williams 1983: 300) or "relativized Theta Criterion" (Carrier and Randall 1992: 180): while a lexical item can still only be assigned one θ-role within the same argument complex, it can receive two θ-roles on condition that they are discharged by two predicates within different argument complexes (Culicover and Wilkins 1986: 123; Napoli 1989: 72-3; Schein 1995: 50). In (154), *the fish* receives one θ-role from the primary predicate *served* and another from the secondary predicate *free*; since these predicates are not thematically related, i.e. they do not form a complex predicate and none of them selects the other, the configuration

is in accord with the requirements of the relativized Theta-Criterion (Napoli 1989: 73; Williams 1983: 301).

The Predication-theory analysis of secondary-predicate constructions also violates the constraints imposed by the Projection Principle (Culicover and Wilkins 1986: 120; Williams 1983: 307). At D- and S-structure, *the fish* is the grammatical and thematic direct object of *served* (155a); at Predicate Structure, however, *the fish* is not only the thematic direct object of *served* but also the thematic subject of *free* (155b). There is thus no isomorphism between syntax and semantics at all levels of representation as in SC-theory: although NP_2 and XP stand in a subject/predicate relation at Predicate Structure, they do not constitute a structural subject/predicate configuration at D- and S-structure.

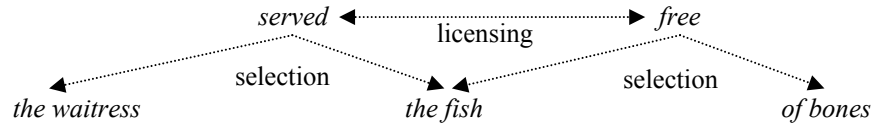
(155) a. The waitress **[**served [the fish]**]** [free of bones].
b. The waitress [served$_i$ the fish$_{i/j}$ free of bones$_j$].

One final GB-principle that at least some predication theorists no longer hold firm to is the binary-branching requirement. If NP_2 and XP need not form a clause, they can be analysed as sisters to the matrix verb under VP (or V') in a ternary configuration (Carrier and Randall 1992: 225), as is also illustrated in (154).

When we strip Predication theory off such technical notions as 'maximal projection' or 'c-command', we can see more clearly how it scores over the traditional ternary analysis of secondary-predicate constructions discussed in chapter 4: verbs such as *consider*, *wipe* and *eat* assign two thematic roles, one to their subject arguments and one to their direct-object arguments, but not a third one to the highly problematic entity 'predicative complement' as in descriptive accounts. XP is itself a predicate that assigns a thematic role to its subject argument, which is identical with the direct object of the matrix verb. It is thus not necessary to assume that the main verb selects another predicate, let alone the XPs of sentences such as *John drank himself crazy* or *John ate the meat hot*. If there is no selectional relation between the primary and the secondary predicate, an alternative way of holding these two phrases together in a flat structure must be proposed. NP_2 can be argued to act as a bridge between the argument structure of the primary predicate and that of the secondary predicate because it fulfils a dual function as direct object of the main verb and subject of XP. Since the external argument of the secondary predicate is also the internal argument of the primary predicate, the secondary predicate "will not be semantically floating — it will be tied into the thematic structure" of the primary predicate (Napoli 1989: 120). While the subject, the direct object, and the internal argument of XP are bound into the construction because they are selected by their respective predicates, the secondary predicate is said to be 'licensed' by the primary predicate because it

bears a thematic relation to a lexical NP that is itself thematically related to the primary predicate (156) (Rapoport 1993: 159).

(156)



All of this looks promising in theory because it conforms to the empirical findings that the main verb, NP_2 and XP are separate constituents not bound together in any way by additional structure. If we try to put the ideas of Predication Theory into practice, however, disillusionment sets in rather quickly.

7.2 Treatment of depictive patterns in Predication theory

Rapoport is a proponent of the complex-predicate analysis for *consider*-type and *wipe*-type sentences (cf. 6.2), but she decisively prefers a predication account for depictive patterns because it is intuitively implausible to argue that *eat-raw* or *drink-cold*, for instance, form semantically coherent complex predicates (1993: 169). In Predication theory, the primary predicate and the secondary predicate neither constitute a complex predicate nor does one select the other; rather, they are tied together in the sentence via the licensing relation effected by their shared argument (Rapoport 1993: 170; Williams 1983: 301). The shared argument in depictive patterns can be either NP_2 (157a) or NP_1 (157b).

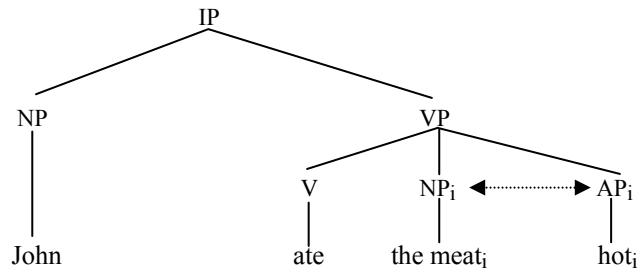
(157) a. John_i ate_i $\underline{\text{the meat}_{i/j}}$ hot_j.
b. $\underline{\text{John}_{i/j}}$ ate_i the meat_i $drunk_j$.

Object-related depictive XPs like *hot* are also sometimes referred to as O-predicates, and subject-related depictives like *drunk* as S-predicates, for short (Staudinger 1996: 49). If the predictions made by Predication theory are correct, the right co-indexing relations can be established in a structural configuration where the subject of the secondary predicate is outside the maximal projection of that predicate and symmetrically c-commands it. Early predication theorists have submitted the following phrase-structure trees to show that these predictions are indeed borne out (e.g. Demonte 1987: 13)[109]: in (158a), the maximal projection of the adjective *hot*, AP, is a sister to the main verb and the direct-object NP within VP. The direct object *the meat* is accessible as the external argument of *hot* because it is outside its maximal projection and symmetrically c-commands this projection. The sentential subject *John*, on the other hand, is on a higher structural level than AP and therefore not in a relation of symmetric c-

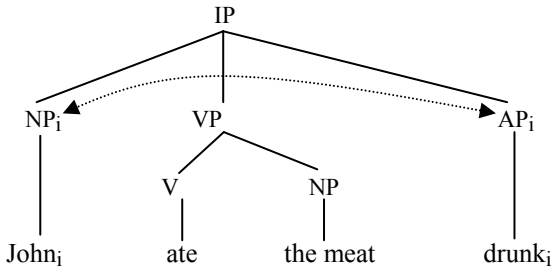
[109] The following diagrams only show the co-indexing relations between the secondary predicate and its external argument, not those between the primary predicate and its arguments.

command with it. In (158b), the maximal projection of the adjective *drunk*, AP, is on the same structural level as the sentential subject and the VP. As a consequence, the sentential subject *John* can serve as the external argument of *drunk* because it symmetrically c-commands its maximal projection AP. The direct object *the meat*, on the other hand, is on a lower structural level than the maximal projection of the secondary predicate and therefore not available for a symmetric c-command relation with it.

(158) a. John ate <u>the meat</u>$_i$ *hot*$_i$.



b. <u>John</u>$_i$ ate the meat *drunk*$_i$.



These representations of the respective structural positions of S- and O-predicates are in accordance with the symmetric c-command requirements of Predication theory, but they are unsustainable empirically. The verb and its direct object do not form a constituent to the exclusion of an S-depictive, as (158b) has us believe; rather, there is ample evidence that both O- and S-depictives must be positioned inside VP: when the VP is fronted, an S-depictive must obligatorily be fronted along with it in the same way as an O-depictive (159a, a'); similarly, when the VP occupies the focus position in a *wh*-cleft construction, both an S-depictive and an O-depictive must be located in this position as well (159b, b') (Roberts 1988: 704-5). A final test that indicates that S-depictives are also part of VP relies on the scope relations of VP-negators. To take an adverbial example first: the adverb *deliberately* can be part of VP and be within the scope of a VP-negator (*John* [*didn't kiss his wife deliberately*]), but may also be outside VP and modify the whole proposition, so that the scope of a VP-negator does not extend over it (*John deliberately* [*didn't kiss his wife*]). As (159c, c') illustrates, only the first option is open to secondary predicates, i.e. depictive adjectives are always within the scope of a VP-negator, no matter if they refer to the subject NP or the direct object NP (Roberts 1988:

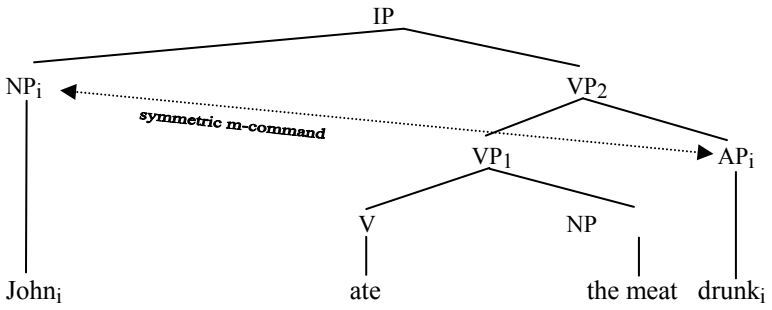
707). In other words, (159c) cannot mean that John didn't eat his steak because he was drunk and (159c') cannot imply that John didn't eat his steak, which was hot at the same time.[110]

(159) a. I expected John to eat the steak drunk, and **eat the steak drunk** he did.
a'. John wanted to eat the steak hot, and **eat the steak hot** he did.
b. What John did was **eat the steak drunk**.
b'. What John did was **eat the steak hot**.
c. John [didn't eat his steak **drunk**].
c'. John [didn't eat his steak **hot**].

What all of these findings indicate is that S-depictives are not on a higher structural level than O-depictives. If the S-depictive *drunk* in representation (158b) must be positioned within VP, however, the traditional machinery of Predication theory no longer works because the sentential subject *John* does not symmetrically c-command the maximal projection of *drunk* in such a configuration. There have been several attempts to find ways around this problem. Carrier and Randall (1992: 221-2) and Rapoport (1993: 170-1), for example, suggest a more relaxed definition of the co-indexing requirements between subject and predicate in terms of symmetric m(aximal)-command in lieu of symmetric c-command. Two constituents are said to symmetrically m-command each other if the first maximal projection that dominates one constituent also dominates the other constituent. The relation between an O-depictive and its subject can easily be redefined in terms of m-command: in configuration (158a), the NP *the meat* and the O-depictive *hot* are both dominated by VP as the first maximal projection. To establish an m-command relation between an S-depictive within VP and the sentential subject outside VP, some ingenuity has to be employed. Carrier and Randall believe that the S-depictive is positioned in VP, but they maintain that it is adjoined to the lower maximal projection VP_1. Since AP is then dominated by only a segment of the verb phrase (i.e., VP_2), they go on to claim that the first full maximal projection dominating it is IP. As a consequence, the sentential subject *John* becomes accessible for a symmetric m-command relation with the S-depictive *drunk* (1992: 221).

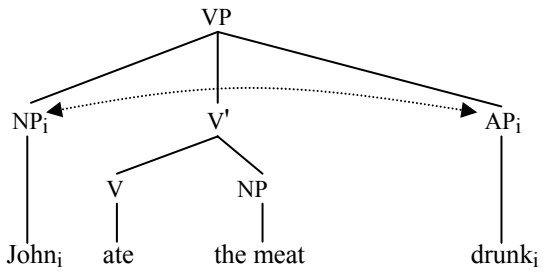
[110] Secondary predicates can be outside the scope of VP-negation in a slightly different construction that will be discussed in 10.3.2: In *Angry at the cook, John didn't eat his steak*, the scope of the VP-negator does not extend over the S-predicate *angry at the cook*.

(160) John$_i$ ate the meat *drunk*$_i$.

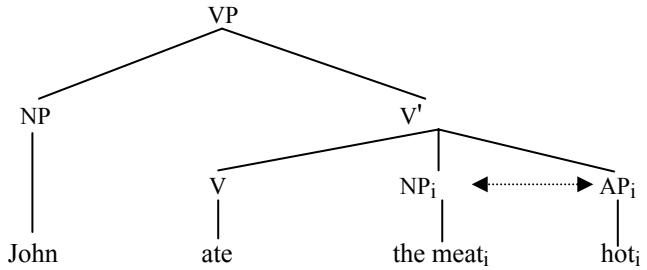


This is a very contrived solution indeed. Fortunately for predication theorists, the more recent VP-internal subject hypothesis (cf. 5.3.5) has made the use of m-command superfluous again: if it is assumed that the sentential subject occupies the [SPEC,VP]-position at D-structure, it can symmetrically c-command an S-predicate within VP. The direct-object NP is, according to standard X'-theory, thought to be located within the V'-projection, so it cannot interfere as a potential candidate for symmetric c-command (161a). An O-depictive is also situated in V', where it stands in a symmetric c-command relation with the direct object of the main verb (161b) (Mallén 1992: 13, 26; Rothstein 2000: 243).

(161) a. John$_i$ ate the meat *drunk*$_i$.



b. John ate the meat$_i$ *hot*$_i$.



Owing to the VP-internal subject hypothesis, it is possible to retain the symmetric c-command relation in a predication account by simply moving it to a lower structural level than in the original configuration: while an S-predicate and the sentential subject were both generated under IP in the older format (158b), they are now positioned under VP (161a); in a similar vein, an O-predicate and the direct object were originally located in VP (158a), and are now thought to be situated within V' (161b). While this new configuration equally fits the bill with respect

to the symmetrical c-command requirement, it is, like the VP-internal subject hypothesis itself, not amenable to empirical testing. The factual arguments that have been provided for the claim that an S-predicate is located within VP and an O-predicate within V' do not stand up to closer examination. Mallén, for instance, argues that while a verb and its direct object cannot be deleted independently of an O-predicate because they are all part of the V'-constituent (162a), a verb and its direct object can be deleted to the exclusion of an S-predicate, which is outside V' (162a') (1992: 8-9). This non-constituent coordination evidence is not convincing, however. (162a) is ungrammatical with the relations indicated because the sentence is open to two other interpretations that cancel the desired reading: *Bill* can be interpreted as a coordinated direct object that is modified by the O-predicate *sober* in the same way that the first conjunct *Mary* is modified by the O-predicate *drunk*; somewhat less likely, *drunk* and *sober* can also be understood as S-predicates modifying the sentential subject *John*. When these additional readings are not available, a verb and its direct object can in fact be deleted independently of an O-predicate; for pragmatic reasons, *raw* and *well-done* in 162a" cannot refer to *John* as S-predicates, and *well-done* cannot refer to *Mary* as an O-predicate (unless John is a cannibal), so there is nothing that prohibits a reading where John ate the steak raw and Mary ate the steak well-done. The test Rothstein adduces for the putative distinction between O-predicates within V' and S-predicates outside V' does not fare much better. She claims (*contra* 159b) that S-predicates can be left stranded in a *wh*-cleft construction (162b)[111], while O-predicates cannot (162b') (2000: 242-3). This argument is inadmissible for a rather straightforward reason, though: a cleft construction splits a simple sentence into a complex one with two verbs; the S-depictive within the first subclause of (162b), *What John did* ***drunk***, can refer to the subject *John*, but the predicative *hot* in the first subclause of (162b'), *What John did* ***hot***, has no direct object it can relate to.

(162) a. *John saw Mary$_i$ drunk$_i$ and Bill ∅ sober$_i$.
a'. John$_i$ sang the song drunk$_i$ and Bill$_j$ ∅ sober$_j$.
a". John ate the steak$_i$ raw$_i$ and Mary ∅ well-done$_i$.
b. What John did drunk was eat the steak.
b'. *What John did hot was eat the steak.

The structural licensing conditions proposed by Predication theory for secondary predicates in depictive constructions are thus not convincing. As S- and O-depictives cannot be distinguished structurally, the symmetric c-command relation thought to underlie the co-indexing between a secondary predicate and its external argument cannot be upheld in its present form.

[111] This sentence is not accepted by all native speakers, though (ROS: 50).

7.3 Treatment of resultative and qualifying patterns in Predication theory

While the idea that depictive secondary predicates are not selected, but licensed by the argument complex of the primary predicate is intuitively appealing (even if it is difficult to calibrate the right structural conditions for the relation between the depictive predicate and its external subject), we have cause to question the licensing account for resultative and qualifying patterns offered in Predication theory.

Resultative secondary predicates, which can only refer to direct objects, are thought to be subject to the same structural configurations as O-depictives, i.e. they are situated in V' together with their external argument, the direct object of the primary predicate (cf. 161b). There are, however, quite noticeable thematic differences between resultative and depictive patterns: in a sentence such as (163), the resultative AP *red* seems to bear a rather specific semantic relation to the primary predicate *painted*; if this is so, it is at least arguable that resultatives are selected by the main verb (Carrier and Randall 1992: 183-4; Rothstein 1995: 30; Simpson 1983: 149) — otherwise it would not be possible to explain why the semantic relation between a depictive XP and its primary predicate is much looser than that between a resultative XP and its primary predicate.

(163) John$_i$ painted$_i$ the door$_{i/j}$ red$_{i/j}$.

The analysis of (163) clearly falls behind the Predication theory account of depictives, though, and is not superior to the standard descriptive treatment of resultative sentences. What syntacticians advocating the configuration of (163) frequently do not mention is that this structure is in fact at odds with the principles of Predication theory: the NP *the door* receives a θ-role from two predicates, the primary predicate *painted* and the secondary predicate *red*. However, since the secondary predicate is selected by the primary predicate, these two predicates are not thematically independent and the *the door* consequently receives two θ-roles within the same argument complex, in opposition to the requirements of the relativised Theta-Criterion. The above analysis thus runs into exactly the same obstacles as the respective descriptive account because the resultative XP is a predicate but is treated on a par with complements: "there would be a problem if we allowed lexically selected secondary predicates because such predicates would be *both* arguments *and* predicates. We would then be faced with the anomaly that because they are arguments secondary predicates must get a θ-role from the verb, but because they are predicates they must not" (Aarts 1995: 97). Moreover, since sentences with O-depictives and those with resultative XPs are assigned the same structure, Predication theory is not able to explain the semantic differences between depictive and resultative constructions; saying that the secondary predicate of the former pattern is only licensed by the matrix verb,

while that of the latter is actually selected by it, does not explain the depictive vs. resultative semantics. For these reasons, syntacticians such as Rapoport think that a Predication-theory account is not adequate for resultative constructions and suggest other treatments, such as a complex-predicate analysis, instead (cf. 6.2).

In a resultative construction such as (164), where the main verb does not seem to have a thematic relation with the postverbal NP, Carrier and Randall speculate that the NP is not the thematic direct-object argument of the primary predicate. As in ordinary resultative patterns, the resultative XP is thought to be selected by the primary predicate and to take the postverbal NP as its external argument (1992: 184).

(164) John_i ran_i his shoes_j $\text{threadbare}_{i/j}$.

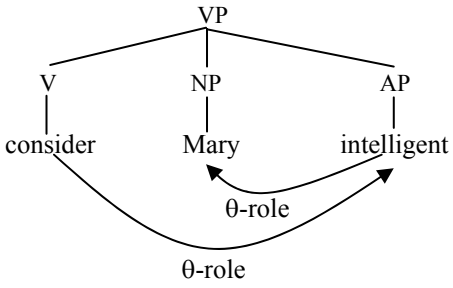
There are two problematic facets to this representation, though: first of all, it is not clear how a licensing account should work if *his shoes* is not an argument of both predicates at the same time (cf. 156); and second, it is doubtful that the semantic relation between *run* and *thread-bare* is any stronger than that between *eat* and *hot* in a depictive construction.

Most predication theorists are also hesitant to analyse qualifying constructions as (165a), i.e. with the main verb selecting a direct-object argument and the secondary predicate assigning its external θ-role to the direct object. Like SC-theoreticians, they suppose that there is not really a semantic relationship between a verb such as *consider* and its postverbal NP and consequently submit structure (165b) for qualifying sentences, which is identical to that proposed for exceptional resultative patterns such as (164) (Carrier and Randall 1992: 226-7; Napoli 1989: 119-21; Wechsler 1997: 318; Williams 1983: 300).

(165) a. John_i considers_i $\text{Mary}_{i/j}$ intelligent_j.
b. John_i considers_i Mary_j $\text{intelligent}_{i/j}$.

In this representation, the primary predicate *consider* does not select *Mary* as its direct object argument, but only assigns θ-roles to the sentential subject *John* and the qualifying XP *intelligent*. The secondary predicate, in its turn, assigns an external θ-role to the postverbal phrase *Mary*. (166) shows the structural and thematic configuration believed to underlie a typical qualifying sentence, ignoring the sentential subject.

(166)



As in SC-theory, the claim that the postverbal NP of *consider*-type verbs has no semantic relation with the matrix verb is mainly based on the feeble semantic argument that John does not consider 'Mary' (cf. 5.1). However, I do not see that it is intuitively more plausible to claim that John considers 'intelligent'. Napoli herself admits that "it is difficult to find arguments for Williams' ... position", but she nevertheless bows to his authority and assumes that it is basically "correct" (1989: 119). What also detracts from the above configuration is the curious syntactic status of the postverbal NP, which must be claimed to occupy a position subcategorised, but not θ-marked by the main verb (Williams 1983: 307). Wechsler argues that if a predicate XP does not get a local subject through the argument of the verb, "a non-thematic ... subject is added to the verb's valence list" (1997: 319) — which seems to be a rather *ad hoc* explanation. As Stowell already noted, "[i]f verbs were permitted to subcategorise for complements to which they assign no thematic role, then subcategorisation would have to be treated as an independent mechanism in the verb's lexical entry, thus increasing the complexity of the lexicon" (1983: 300). Last but not least, the analysis of (166) is doubtful because the primary predicate must again be assumed to select another predicate as in the predication analysis of resultative sentences (163, 164). In face of these difficulties, many syntacticians that choose a predication account for depictives shy away from a predication analysis for qualifying patterns and prefer an SC-analysis instead (e.g. Rothstein 1995: 30-1).

While a licensing account thus works to a certain degree for depictive patterns, it runs into insuperable difficulties with resultative and qualifying constructions. Syntacticians who want to stick to Predication theory are therefore forced to adopt mixed analyses for secondary-predicate constructions, for instance a licensing analysis for depictive sentences, a complex-predicate account for resultative patterns and an SC-analysis for qualifying constructions. Since these three constructions do not show variable syntactic behaviour, such an approach is rather stipulative and, what is more, the different syntactic analyses do not really explain the different meaning relationships underlying the three secondary-predicate constructions.

For syntacticians who, like Green, are interested in the proper syntactic analysis of secondary-predicate constructions, the conclusions that must be drawn from part I of this dissertation are rather sobering. Every conceivable analysis of the [NP_1 V NP_2 XP]-pattern has been put forward, but each of them results in distributional mismatches that can only be resolved opportunistically. Neither is there any additional structure between certain elements of this pattern (such as between NP_2 and XP or between V and XP), nor is there a convincing way to argue that some element(s) in the structure (such as the main verb or the main verb and the secondary predicate) select(s) the others. Secondary-predicate constructions are not singular in this respect, though. To take just one other complex structure, the syntax of double-object constructions commands as little consensus in discrete grammars as the syntax of secondary-predicate constructions. To begin with, there are two different complex-predicate analyses for this pattern: while Larson hypothesises that in the sentence *John gave a book to Mary* the verb *give* forms a constituent with the indirect object in V', which then theta-marks the direct object *a book* as its inner 'subject' (cf. 6.2), other generative grammarians maintain that the verb *give* forms a constituent with the direct object *a book* in V', which takes the indirect object (*to*) *Mary* as the inner 'subject' (e.g. Haegeman and Guéron 1999: 124-5). Still others have come up with an SC-analysis for double objects: Kayne and Hoekstra, for example, both speculate that *give* selects an SC with possessive semantics such as [*a book to Mary*] (Hoekstra 1988: 135-7; Kayne 1984: 133-4). Since the additional structure provided by complex-predicate and SC-accounts of double-object constructions is as difficult to establish as for secondary-predicate constructions (cf. footnote 105), Jackendoff sharply criticises that Larson's "proposed analysis ... introduces a great deal of structure that is not evident from the surface of the dative construction" (1990b: 453). He therefore opts for a ternary analysis, in which the main verb selects the three arguments *John*, *a book* and (*to*) *Mary*. Yet a selection account begins to encounter problems with sentences such as *John threw Mary the ball* or *Sally baked Bill a cake* because it is not plausible to argue that the NPs *Mary* and *Bill* are selected by their respective matrix verbs. All of this gives the impression of arbitrariness because none of the possible building-block analyses seems to be intrinsically superior to the others, and the decision for one particular analysis over another appears to rest on the aims of the syntactician and not on the linguistic situation (see also Langacker 1987: 318). If we do not want to arrive at the cynical conclusion that one syntactic analysis is as good as any other because distributional mismatches can always be brushed aside or explained away by some theory-internal mechanisms, it is time to realise that there is something seriously amiss with discrete syntax and to prepare the way for non-discrete accounts of grammatical constructions.

Part II:

Towards a Non-discrete Account of the Resultative, Depictive and Qualifying Constructions in English

8. A critique of intersystemic and epistemological discreteness

8.1 A critique of intersystemic linguistic discreteness

8.1.1 The functionalist criticism of the modular architecture of grammar

Thus far we have criticised the premises of the discreteness paradigm operative within the system of syntax. Before we can start to propose non-discrete analyses in a Construction-grammar framework, there are two more discreteness assumptions that need to be taken issue with in this and the following sections.

Generative grammarians theorise that the so-called language faculty, like the mind as a whole, has a modular architecture, i.e. that it consists of separate, autonomous systems with their own distinctive properties (Cook and Newson 1996: 30-1; Fanselow and Felix 1993: 173; Fodor 1983: 64-86). This hypothesis implies that the grammatical system can and should be subdivided into distinct components or "languages of the mind" (Jackendoff 1997: 41), each operating in a discrete fashion: "Each of these 'languages' is a formal system with its own proprietary set of primitives and principles of combination, so that it defines an infinite set of expressions ... For each of these formats, there is a module of mind/brain responsible for it" (Jackendoff 1997: 41). By analogy with the computational model, the distinct formats are regarded as closed systems that only interact with the other systems on the level of input and output structures (Linz 2002: 216).

To Chomsky and his followers, the central component of the language faculty is syntax, which he claims is governed by its own self-contained principles and which can therefore be studied for its own sake, i.e. independently of meaning and use in communication (Fanselow and Felix 1993: 67). The other representational levels are considered output structures of syntactic derivations only and are thus of minor significance to the overall system: "The language is embedded in performance systems that enable its expressions to be used for articulating, interpreting, referring, inquiring, reflecting, and other actions" (Chomsky 1995: 2). All of these performance components, including semantics, are taken to be external systems that are cognitively independent of syntactic competence (Grewendorf 2002: 14). While the semantic aspects operative on the level of Logical Form, which is designed as an interface to semantics proper, are characterised by Chomsky as "pure syntax" (2000: 125), the function of the actual semantic component is merely to interpret syntactically generated structures, without its having major generative capacities of its own. The bottom line is that Chomsky and his followers restrict core grammar to the formal descriptions provided by the syntactic component, banish-

ing questions of meaning and use to some inferior position in the system: "In the minimalist model ... it is axiomatic that semantics has no place in the derivational history ... Our approach, thus, is blind to semantic motivation, although it is not immune to semantic consequence. Our main motivation ... is that this is the correct order of things, and not the other way around" (Raposo and Uriagereka 1995: 179-80).

Such a narrow focus on syntax has not gone unchallenged within the generative school itself. The most formidable opponent of this "syntactocentric architecture" of grammar is Jackendoff (2002: 107), who accuses Chomsky of "emasculating semantics — of giving the messages conveyed by language a far lesser role than the messenger" (2002: 269). Jackendoff holds that the representational formats provided by the linguistic system must minimally include phonological, syntactic and semantic/conceptual structures, each equipped with its own generative system (2002: 5-7). These formats are conjectured to be independent of one another in that they consist of distinct primitives and rules of combination (2002: 121-3), but to be related by a set of interface rules that link some, but by no means all, aspects of two representational levels (2002: 123). In a similar vein, Bierwisch and Lang's two-level approach to meaning posits a distinct representational format called 'Semantic Form', which determines the grammatically relevant part of meaning and functions as an interface between syntax and conceptual structure (1987: 664). Unlike GB-theory and the MP, these models do thus not equate grammar with syntax but postulate interconnected formal and conceptual structures. Nevertheless, Jackendoff's and Bierwisch and Lang's theories are also set up in accord with the axioms of the discreteness paradigm. Not only do the separate representational formats operate over their own structured sets of linguistic primitives and rules, but the formats exist independently of one another and are only partially related by interface rules. This sort of independence between different grammatical systems will be called 'intersystemic discreteness' (cf. Linz 2002: 14).

The notion of intersystemic discreteness has come in for harsh criticism with functionalist grammarians. Functionalists oppose the view that there are distinct representational components such as syntax and semantics that could be described on their own terms. Bolinger, for instance, finds fault with the idea that language should "establish a lunacy ward in its grammar or lexicon where mindless morphs stare vacantly with no purpose other than to be where they are" (1977:ix), and Wierzbicka laments "the meaningless universe of arbitrary, blind rules, and arbitrary, blind exceptions to the rules" (1988: 7) that have been created by generative syntax. The separation of syntax and semantics into two different linguistic components is not considered to do justice to language; Jäger criticizes "die charakteristische Sig-

nifikanten-Reduktion des sprachlichen Zeichens, das qua Signifikant nur der prinzipiell nachträglichen Repräsentation sprachunabhänger Erkenntnisinhalte, der Signifikate, dient" (1993: 81).

A basic tenet of functionalist grammars, including cognitive and constructional grammars, is that syntax is not a self-contained, autonomous system, but that formal structures are systematically motivated by their semantic and pragmatic functions (Croft 1991: 4, 2001: 9; Duffley 1992: 15). The stipulation of different representational levels or derivational rules is therefore incompatible with functionalist analyses, which attempt to explain the surface structural features of a particular construction in terms of the functions it performs (Croft 1991: 31-2; Fillmore, Kay and O'Connor 1988: 534). Contrary to Chomsky's syntactocentricsm, the semantics of grammatical constructions are a prime concern of functionalist studies: "The central question ... is how linguistic expressions and the concepts they express can be meaningful" (Lakoff 1987: 266; see also Langacker 1987: 12). Syntactic form is not a discrete, arbitrary level of grammatical representation, but is inextricably intertwined with semantics and pragmatics. To stress the important insight that syntax and semantics are like flip sides of a coin, Wierzbicka has renamed syntax into "grammatical semantics" (1988: 1).

While Wierzbicka is a vocal critic of the paradigm of intersystemic discreteness, she does not at the same time oppose semantically discrete analyses. Her approach to semantics is reductionist because she works with what she calls "an alphabet of human thoughts" (1988: 11), a small set of semantic primitives and determinate rules of combination. Most other functionalist grammarians reject such semantic primitives because they do not think that complex meanings are decomposable into atomic elements (e.g. Fauconnier 1997: 70; Lee 2001: 89); I concur with the view that no semantic formula can ever hope to exhaust the meaning of a complex syntactic construction. Lexical items contain "frame semantic meanings ... rich with world and cultural knowledge" (Goldberg 1995: 27), which cannot easily be captured by paraphrases or formal semantic representations. Functionalist descriptions of the meaning of syntactic constructions therefore favour rather holistic concepts such as prototypes and image schemata (Lakoff 1987: 372). Such concepts are directly endowed with meaning because they derive from fundamental physical experiences which human beings make in their environment (Lakoff 1987: 271). Syntactic constructions thus code inherently meaningful and integrated aspects of reality: "The 'basic logic' of image schemas is due to their configuration as gestalts — as structured wholes which are more than mere collections of parts. Their basic logic is a consequence of their configurations" (Lakoff 1989: 116). The non-discrete or *gestalt* semantics of syntactic structures is a basic tenet of Construction grammar that will also be

adhered to in the conceptual analyses of the RESULTATIVE, DEPICTIVE, and QUALIFYING Constructions in the following chapters.

It is important to realise the interconnectedness of syntax and semantics, and not to make the same mistake as Chomsky in the opposite direction by simply replacing his primacy of syntax with primacy of meaning. Language is not merely a system to encode pre-existing conceptual contents; rather, meaning cannot be considered independent of linguistic form:

> Konstitutives Bestimmungsmoment sprachlicher Zeichen ist nicht das *Formale*, sondern vielmehr die *Form*, d.h. das Vermögen der Sprache, die Vielzahl fragmentarischer Wissenskomponenten in sinnlich wahrnehmbarer Form zu binden und dadurch als formgebendes Medium zu fungieren. (Linz 2002: 226)

This non-discrete view of form and meaning is well in tune with current research in the neurosciences. As has already been noted in 3.4, Damasio does not make a sharp distinction between linguistic and non-linguistic entities because lexical items and constructions are only accessible to the mind in the form of acoustic and visual images — a connectionist perspective that is clearly at odds with the generative notion of an autonomous language faculty (cf. Cook and Newson 1996: 30-1). The neurons firing synchronously in response to some experience code a host of disintegrated, multimodal pieces of information including visual stimuli, motor activity, somatic reactions evaluating the experience, and also words/constructions associated with that experience (Damasio and Damasio 1992: 83). In contrast to the traditional view (expressed most prominently in Fodor 1983), linguistic items are not held to be stored in distinct neuro-anatomical sites, but to be represented in a similarly disintegrated fashion to the objects and events they denote. The convergence zones that index certain experiences thus record linguistic information alongside the temporally related non-verbal information. In light of these findings, the assumption of a modular architecture of the linguistic system is as problematic as the notion of some isolated language faculty itself; linguistic knowledge is rather to be seen as part of general cognition.

Chomsky is, of course, aware of the fact that generative theories as they presently stand do not readily translate into the modern neuroscientific models. However, he unflinchingly regards this theoretical divide as "a problem for biology and the brain sciences, which, as currently understood, do not provide any basis for what appears to be fairly well established conclusions about language" (1995: 2). I do not think that it is a problem for biology to explain the nature of the syntactic and intersystemic discreteness postulated by contemporary generative models; since these models are far from being "well-established" because they have to rely on opportunistic analyses and controversial intratheoretical premises, the question may more reasonably be put if there is any compelling reason to believe that they are still on the right track themselves.

8.1.2 Construction-independent linking rules — a way out for intersystemic discreteness?

Before dismissing the paradigm of intersystemic discreteness completely, we must examine a device that has only been touched on so far, but that serves as a loophole for discrete grammatical models: the notion of 'interface rules'. Interface rules (also commonly known as 'correspondence' or 'linking' rules) have been integrated into the modular architecture of generative grammar in order to relate independent, parallel representational levels with one another. Jackendoff, for instance, has designed semantics and syntax as two autonomous and fundamentally different generative systems, and is at pains to "evacuate all semantic content from syntactic structure" (2002: 124). At the same time, however, he posits an interface that establishes the necessary correspondences between certain aspects of the two representational tiers (Jackendoff 2002: 124). Thus, while each system contains essentially domain-specific primitives and rules, there are "bi-domainspecific" interface processors that can read information contained in two separate systems (2002: 220). This bi-domainspecificity of the interfaces is strictly limited in scope, though, and does not neutralise the fundamental autonomy of syntax and semantics. Interface rules only establish correspondences between narrowly circumscribed aspects of two representational formats, yet are blind to many other details: "An interface module communicates between two levels of encoding, say L_1 and L_2, by carrying out a partial translation of information in L_1 form into information in L_2 form" (Jackendoff 1997: 42; see also Jackendoff 2002: 123).

Few generative grammarians are prepared to work on such a grand theoretical scale as Jackendoff. In most syntactic studies, the discussion about the interface linking syntax and semantics boils down to a more limited, albeit central question: to what extent is the syntactic behaviour of lexical items in a sentence determined by their semantic properties (Kaufmann 1995: 377; Pinker 1989: 62; Tenny 1994: 1-2)? The interaction between syntax and semantics is typically characterised in the form of rules describing regular correspondences between thematic roles and syntactic positions. Syntacticians attempt to construct so-called 'argument structure representations' of verbs, which only code the grammatically relevant aspects of their meaning such as the number and nature of the arguments they require (Pustejovsky 1995: 63; Tenny 1994: 7). These representations must then "interface in some manner with semantic representations on the one hand, and with syntax on the other hand" (Tenny 1994: 8).

(167b) contains an example of an argument-structure representation for the verb *put*, with (167a) and (167c) providing the corresponding semantic and syntactic structures, respectively (adapted from Carrier and Randall 1993: 122).

(167) a. CAUSE (x, [INC BE (y, [$_{\text{PLACE-c}}$ AT [z]])])

b. x (y, z)

c. [$_{\text{NP}}$ Sue] put [$_{\text{NP}}$ the books] [$_{\text{PP}}$ into crates].

The semantic formula in (167a) roughly reads as follows: 'An entity x causes an entity y to begin to be at the place denoted by z'. In the related argument-structure representation (167b), *put* is defined as requiring the three arguments the semantics refer to, namely x, y and z. The diacritics in the representation indicate how the arguments wind up in the syntax: the argument x, which is placed outside the brackets (the 'external argument', i.e. external to the VP), will be linked to the syntactic subject position and be realised by an NP; the argument y, which is inside the brackets and underlined (the 'internal direct argument', i.e. internal to the VP and not introduced by a preposition), will materialise as the direct object and also be realised by an NP; finally, the argument z, which is inside the brackets but not underlined (the 'internal indirect argument'), will be mapped onto a prepositional object position and be introduced by a locative preposition (Carrier and Randall 1993: 122-3). As is typical of such analyses, all three representational formats rely heavily on discrete notions that are held to be specific to the respective level, e.g. 'CAUSE' in the semantics, 'external argument' in the argument structure and 'subject NP' in the syntax.[112] Verbs with identical argument-structure representations can be put into coherent classes because they show similar syntactic behaviour (in our example, this would include verbs such as *place*, *lay* or *throw*). Semantic differences that do not have syntactic reflexes are invisible to the linking rules: "The conceptual structure is pared down to the necessary meaning of the verb; and only the necessary meaning that is relevant to syntax at that" (Tenny 1994: 186).

The use of linking rules is not exclusive to generative grammar. In fact, the monostratal, non-derivational model of Lexical-Functional Grammar (LFG) has primarily been developed

[112] This is another example where formalist and descriptive grammars can be seen to be much closer to each other than is usually assumed: descriptive grammars also make a distinction between the semantic and syntactic levels of representation (e.g. Allerton 1982: 41-2; Radden 1989: 422-3). While semantic relationships are characterised by thematic roles such as AGENT and PATIENT, syntactic relationships are identified by functions such as 'subject' and 'direct object'. Descriptive grammarians are anxious to point out that there is no one-to-one correspondence between syntactic function and semantic role, as becomes immediately evident when one compares active and passive versions of a sentence: *John* [AGENT/subject] *killed the dog* vs. *The dog* [PATIENT/subject] *was killed by John*.

to capture correspondences between the semantics and syntax of sentences (Goldberg 1995: 113). LFG is a constraint-satisfaction theory that works with a parallel correspondence architecture (Bresnan 2001: 3-4): the a(rgument)-structure characterises the participants required by the predicate in an eventuality (and is thus similar to the subcategorisation frames of valency grammar); the f(unctional)-structure models the syntactic relations obtaining within the sentence, and the c(ategorial)-structure describes the overt expression of syntactic functions in a specific language (Bresnan 2001: 19-22). The way elements of one structure map onto elements of another structure is explicated by general principles formulated as constraints. It is outside of my remit to provide a detailed account of the constraints operative in LFG, so an illustrative example with the verb *put* must suffice. Moreover, I will restrict myself to the correspondences between a-structure and f-structure.

The a-structure representation of a sentence such as *Sue put the books into crates* contains the predicate (PRED) *put*, which requires the three thematic roles AGENT, THEME and LOCATIVE (168a). Thematic roles are assigned the abstract, constraining features [± r] (semantically restricted/unrestricted[113]) and [± o] (objective/non-objective) (Bresnan 2001: 308) on the basis of their position within a proposed thematic hierarchy and on the basis of intrinsic semantic properties (168b). THEME roles are intrinsically [-r] and AGENT roles are [-o] (Bresnan 2001: 308). The highest thematic role on the semantic hierarchy is assigned a [-r] feature by default; since the three roles relevant here are arranged in the order AGENT > THEME > LOCATIVE (Bresnan 2001: 307), the AGENT argument receives the [-r] feature. The [-r] feature is thus by default given to the AGENT as the highest thematic role, but is also inherently assigned to the THEME role. When there are two roles with the [-r] feature, the highest thematic role classified [-o], the AGENT in our sentence, is mapped onto the subject position in f-structure (Bresnan 2001: 311). The THEME role, which has the feature [-r; +o], then maps onto the (semantically unrestricted) object position, while the LOCATIVE role carrying the features [+r; -o] winds up in the (semantically restricted) oblique (prepositional) position (168c) (Bresnan 2001: 311).

[113] Thematic roles are unrestricted if they can be realized by the syntactic functions 'subject' or 'object', which can code a large variety of thematic roles. Semantically restricted roles, on the other hand, must be coded by rather specific syntactic functions.

(168)

a. a-structure:	*put*	<AGENT,	THEME,	LOCATIVE>
b. constraints:		[-r; -o]	[-r; +o]	[+r; -o]
c. f-structure:	[PRED	SUBJ	OBJ	OBL]

Formalist grammarians claim that linking rules such as those illustrated in (167) or constraints like those sketched in (168) can capture construction-independent relations between the discrete representational formats of syntax and semantics (Carrier and Randall 1993: 119-20; Levin and Rapoport 1988: 275; Pinker 1989: 94-5). There is, however, a flaw in this reasoning, which will become manifest from the following discussion.

8.1.3 Symbolic relations as construction-specific linking rules

It is commonly claimed in linking accounts that the complement structure of a verb is predictable from the verb's lexical semantics and general correspondence rules. But the same verb frequently appears in quantitatively and/or qualitatively different complement configurations. It must then be assumed that we are dealing with different verb senses or verbal sememes, which are created by lexical rules that systematically relate the meaning of one sememe to that of another (cf. 169 a, b): "A lexical rule associates one kind of lexical entry with another; it can be seen as taking one lexical entry as input and producing a second as output" (Pinker 1989: 72). As a result, an additional verb sense must be posited for each new complement structure a verb occurs in (Levin and Rappaport-Hovav 1991: 146; Pinker 1989: 63).

(169)

a. John **whistled**/John **whistled** down the street. b. Mary **smiled**/Mary **smiled** her thanks.

$whistle_1 \rightarrow whistle_2$ $smile_1 \rightarrow smile_2$

lexical rules

Levin and Rapoport have submitted a theory of how lexical rules might create extended senses of a verb. In a process they call "lexical subordination" (1988: 280), the basic sense of a verb is subordinated under a new semantic component. The meanings of *whistle* and *smile* in the syntactic configurations *John whistled* and *Mary smiled* are changed to those assumed in the configurations *John whistled down the street* and *Mary smiled her thanks* by the lexical subordination rules sketched in (170) (adapted from Levin and Rapoport 1988: 283 and Levin and Rappaport-Hovav 1991: 138).

(170) a. $whistle_2$: 'move WHILE emitting the characteristic sound of the basic meaning $whistle_1$'
b. $smile_2$: 'express something BY performing the activity of the basic meaning $smile_1$'

When a verb manifests an extended meaning, it will take on the syntactic behaviour associated with the semantics of that additional meaning (Levin and Rappaport-Hovav 1991: 138-9). In our examples, the basic sememes of *whistle* and *smile* are both related to intransitive syntactic constructions, while the extended sememe of *smile* is associated with a transitive pattern and the extended meaning of *whistle* with a prepositional-object construction.

The same overall flavour recurs in every account of lexical rules, although there are substantial differences in detail. To give one more example of a semantic correspondence rule, this time couched in the lexical decomposition framework of Role and Reference Grammar: the basic meaning of the verb *run* as exhibited in the construction *John ran* is given in (171a); the participant x is involved in the activity (expressed by the formal semantic expression *do'*) of running. The extended meaning of *run*, which is assumed to underlie the pattern *John ran to the store*, is derived by adding the operators CAUSE and BECOME to the basic meaning (171b); x is involved in the activity of running, which causes this entity to change its location (cf. Van Valin 1990: 228-30; 2001: 210-1).

(171) a. run_1: do' (x. [run' (x)])
b. run_2: do' (x. [run' (x)]) CAUSE [BECOME at the store' (x)]

Syntax-semantics interfaces and lexical rules seem to be an ingenious means to uphold the idea of intersystemic discreteness, but the form of argumentation provided by such linking accounts is circular. The reason for assuming that there are different senses of verbs such as *whistle*, *smile* or *run* is that they can appear in diverse syntactic configurations. The differences in complementation patterns are then ascribed to the postulated underlying verbal sememes. This is where the circularity arises: these verb senses, which are deduced from surface distributional data, are now taken to explain exactly these distributional data. It is claimed that a verb has different verbal sememes because it is encountered in different syntactic configurations, and that we find distinct syntactic configurations because there are distinct verbal sememes (cf. Goldberg 1995: 11).

Clearly such a form of reasoning has little to recommend it. It is important to realise that what is considered the meaning of a sememe is "contextual meaning[.]" because it cannot be described independently of the context it appears in, i.e. independently of the specific argument-structure configuration we are examining (Schneider 1988c: 158). What is more, these contextual meanings are "the only real manifestations of the semantic level of a language in a text" (Schneider 1988c: 158). Instead of assuming linguistic constructs such as lexical rules

and extended verb meanings, it is thus more empirically adequate to claim that the number and form of syntactic complements is not determined by the meaning of some postulated verbal sememe, but by the surface syntactic construction the verb and its complements appear in.

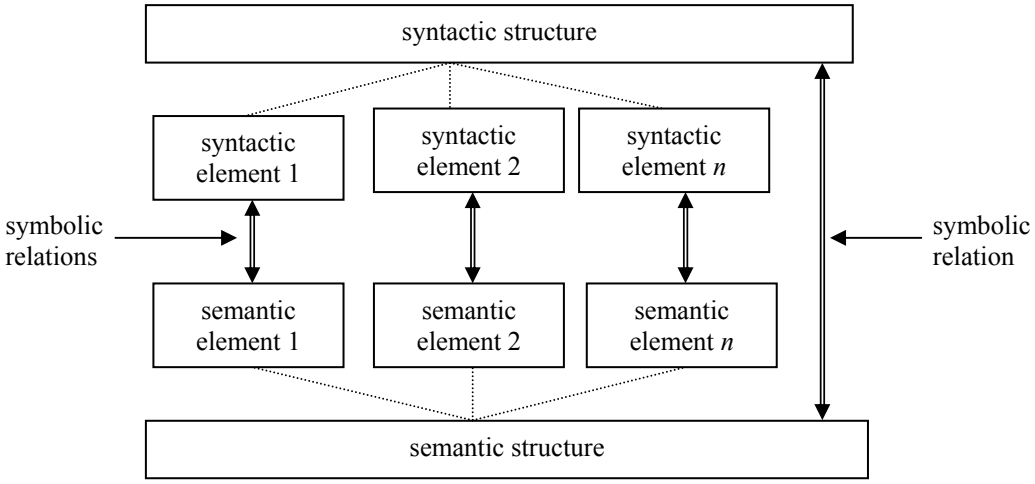
Apart from circularity, there are other problems that detract from the usefulness of linking rules, such as the need to posit improbable verb senses. Is it, for instance, really feasible to assume that the lexicon contains separate entries for 'whistle' and 'move while whistling', 'smile' and 'express by smiling' or 'run' and 'change one's location by running'? We can dispense with such implausible conclusions if we accept that it is not the verb alone that is responsible for the semantics of a syntactic structure, but the integration of the verbal meaning into some constructional meaning: "Thus it is possible to recognize that to a large extent, verb meaning remains constant across constructions; differences in the meaning of full expressions are in large part attributable directly to the different constructions involved" (Goldberg 1995: 19; see also Goldberg and Jackendoff, to appear). The movement component in the semantics of the sentence *John whistled down the street* need then not be attributed to a special sememe of the verb *whistle*, but to a syntactic construction that is also instantiated by sentences such as *John* [*walked/danced/skipped* etc.] *down the street.*

The lexical-rule approach also loses much of its *raison d'être* if we consider that it is next to impossible to define a clear number of verbal meanings. On the basis of different thematic roles, Levin and Rappaport-Hovav distinguish, for example, between the basic meaning of *bake* as a "change of state verb" (as in *bake the potatoes*), and its extended sense as a verb of "creation" (as in *bake a cake*), which is derived by the lexical subordination rule "create by means of change of state *bake*" (1991: 138). But there does not seem to be a natural point at which we could stop splitting verb meanings and postulating additional lexical rules: "Theoretically the number of sememes of a word is infinite" because "in several occurrences of a word its meaning is always slightly different" (Schneider 1988a: 159). This implies that we would need an interface or linking rule for every observed construction in the language. This *reductio ad absurdum* is, I think, the appropriate starting point for the alternative account offered by Construction grammar.

Construction grammar dismisses cross-constructional linking rules and constraints such as those proposed in generative grammar or LFG, and, for that matter, lexical rules creating extended verb senses. The only 'linking rules' that are assumed to exist are those establishing correspondences between the form and meaning of specific constructions. These are nothing else than the symbolic relations which, in componential grammars, are held to obtain only in non-complex lexical items (Jackendoff 2002: 131). In contrast to the paradigm of intersys-

temic discreteness, syntactic and semantic structures do not exist independently, but make up an inseparable symbolic whole (Linz 2002: 146). Similarly, there are no general correspondence rules that operate across a large number of different constructions, but only symbolic relations internal to a specific construction:

Figure 2: Symbolic relations within a syntactic construction



(adapted from Croft 2001: 176)

There is a symbolic relation between the syntactic and semantic structure of the whole construction as well as symbolic relations between elements of the syntactic structure and elements of the semantic structure (Croft 2001: 21; Langacker 1987: 76-7). Again, it is necessary to emphasise that while constructions consist of smaller symbolic units, the whole has an independent claim to reality: "Despite its internal complexity, a unit constitutes for the speaker a 'prepackaged' assembly; because he has no need to reflect on how to put it together, he can manipulate it with ease as a unitary entity" (Langacker 1987: 57). Constructions are complex form-meaning units and thus Saussurean signs like more substantial lexical items. In contrast to the discrete approaches criticised in part I, the RESULTATIVE, DEPICTIVE, and QUALIFYING patterns will be treated as separate constructions on account of their different semantics even though they are syntactically similar.

Since our approach is based on the premise that the linguistic system is made up of lexical items of varying internal complexity, which are organised in an associative network, we are compelled to re-evaluate syntactic relations familiar from constituency and dependency grammars. In a strictly constructional system, the only syntactic relations necessary are the part-whole relations between syntactic elements and the roles they occupy within a construction (Croft 2001: 5). Syntactic configurations such as 'subject of', 'dependent on' or 'sister to' do not have any theoretical status within such a framework because they are not thought to constitute cross-constructionally valid relations (Croft 2001: 54). As with all discrete notions,

it is not possible to come up with clear and empirically adequate definitions of dependency or constituency relations because they always depend on the tests a particular theory has chosen to use (Croft 2001: 179). It has become clear from the discussion in part I that each of the four constituency analyses for secondary-predicate constructions is based largely on theoretical assumptions and not on established fact, so none of them is empirically superior to the others — unless we are prepared to work opportunistically, of course. Yet there is virtue in avoiding the discrete syntactic theories that are currently in use "because the endless circle of syntactic theories witnessed in the last century is a consequence of the futile search for the mirage of the 'right' universal template or set of universal categories, relations, and syntactic structures" (Croft 2001: 61; see also Langacker 1987: v).

I follow Croft in using capitalised names such as SUBJECT and DIRECT OBJECT if I simply want to refer to constructional roles (Croft 2001: 51), and will restrict the lower case terms 'subject' and 'direct object' to discussions of syntactic analyses working within the paradigm of linguistic discreteness. Although SUBJECT and OBJECT "could be named 'Rosencrantz' and 'Guildenstern'" (Croft 2001: 54) as well, it is mnemonically more convenient to stick to the traditional terms but to use them as proper names identifying certain roles in a specific construction.

Construction grammar thus departs radically from mainstream syntactic analyses. Overt syntactic features that are usually assumed to be signs of underlying syntactic relations are systematically reinterpreted in such a non-discrete framework. Since this line of research is still in its infancy and the possibility that some purely syntactic relations will have to be admitted at the end of the day (as is vehemently argued for by Jackendoff 2002: 428), I must restrict myself to a few tentative remarks on case forms and linear order. Both phenomena could be claimed to be not syntactic in nature, but to reveal symbolic relations between syntactic elements and the corresponding semantic elements (Croft 2001: 176). Case is a formal device that serves to distinguish symbolic units by differentiating, for example, between two participants that are typically involved in the semantics of a specific construction. The semantic relations obtaining between the elements of a construction can likewise be highlighted by a relatively fixed linear word order (Croft 2001: 240). In this view, case and linear order are not indicative of syntactic relations, but are formal devices that guide the hearer to identify a specific construction and to understand the symbolic and semantic relations coded by that construction (Croft 2001: 234). As I will hopefully be able to demonstrate in the following chapters, "symbolic relations are where what is interesting about grammar takes place" (Croft

2001: 203), not syntactic relations and primitives such as 'predicative complement', 'small clause', 'complex predicate' or 'symmetric c-command'.

8.2 A critique of epistemological discreteness

8.2.1 The cognitive criticism of objectivist semantics

Formalist grammars implement the notion of linguistic discreteness by stipulating separate representational formats such as syntax and semantics and by ascribing to each of these formats distinct linguistic primitives and rules. There is another manifestation of the discreteness paradigm, which is more philosophical in nature but has far-reaching repercussions on the analysis of language phenomena nevertheless; I will call it 'epistemological discreteness'.

The central idea behind this form of discreteness is that linguistic expressions have an 'extension' in the sense that they directly refer to an ontology or "things in the world" (Cann 1993: 1). In logical parlance, linguistic expressions can be interpreted with respect to a 'model', i.e. a representation of some state of affairs in the world; a 'denotation assignment function' is thought to be able to rigidly associate linguistic expressions with their extensions in the ontology of the model (Cann 1993: 39). A linguistic statement can then be assessed as either true or false, depending on whether it corresponds to the state-of-affairs represented in the respective model on a particular occasion or not (Cann 1993: 15; Saeed 1997: 82). The tradition of objectivist, truth-conditional semantics thus holds that linguistic items directly refer to things, properties and events in the outside world. Objectivist or referential semantics reifies language by making it independent of its human users; all that has to be figured out is the denotational relation between independently existing linguistic labels and aspects of the external world. Space does not allow me to go into the many philosophical and linguistic paradoxes created by this position (see, e.g., Jackendoff 2002: 294-303; Lakoff 1987: 294-6); intuitively, however, the claim that words such as *beautiful*, *to love* or *happiness* directly refer to something that is objectively present in the 'real' world seems to be pushing common-sense plausibility to an unacceptable degree.

If we want to dismiss the idea that the world, the human beings that live in it as well as language are discrete entities which are related in objective ways, we arrive by necessity at the conclusion of cognitive linguistics which insists on "pushing 'the world' down into the mind of the language user ..., right along with language" (Jackendoff 2002: 303). This conceptual or constructivist approach holds that human beings actively construct their reality and impose meaning on it, and that language is one of the central mechanisms that helps human beings to make their environment meaningful to themselves (Jackendoff 2002: 308; Lakoff

1987: 296; Lee 2001: 77; Linz 2002: 143-4): "Meaning is something that the human brain attributes to the world. Things outside the brain do not have meaning in themselves" (Turner 1991: 30). This Kantian insight is increasingly accepted by neuroscientists as well, who realise

> daß den physiochemischen Umweltereignissen, die auf die sensorischen Epithelien auftreffen, als solchen keinerlei objektive Bedeutung für das Nervensystem zukommt ... Bedeutungen von Signalen werden erst durch das Gehirn konstituiert. In diesem Sinne ist das Gehirn kein informationsaufnehmendes, sondern ein informations*schaffendes* System. (Roth 1991: 361)

I do not want to advocate linguistic relativism, however. Although there are undoubtedly interindividual differences in the conceptualisations of reality, these differences are limited in extent because human beings possess the same basic conceptual structures (Lakoff 1987: 268) and constantly have to adjust their conceptualisations of reality to those of others in communication (Jackendoff 2002: 332).

It is fairly easy to conceptualise concrete objects on the basis of perceptual discontinuities: "from the point of view of 'everyday' confrontation with the physical world, it is quite reasonable to say that there is a general human tendency to regard certain relatively constant and discrete 'Gestalten' made up of ('spatiotemporally contiguous' ...) properties, as 'things'" (Lyons 1966: 213). It is much less straightforward, however, to individuate events, i.e. occurrences in our experience, because events are not spatially isolated like objects; what is more, they are not even temporally isolated because they are part of a complex network of occurrences (Croft 1991: 261). The isolation of a non-linguistic, external event and the association of a linguistic construction with that event therefore requires a great amount of conceptual work (Croft 1991: 261). The individuation of objects and complex situations does not differ in kind, but in the degree of sometimes arbitrary mental constructions that are necessary for their respective conceptualisations. To isolate an event from the network of occurrences in the world, it is unavoidable to make generalisations, simplifications, and to impose a certain perspective on the event. Lakoff calls these cognitive constructs which structure experience in a conventionalised way "idealised cognitive models" (ICM) (1987: 68).

Human beings do not just carve out any occurrence from their experience and shape it into a discrete event or ICM, but preferably conceptualise those event types that are somehow "essential to human experience" (Goldberg 1995: 39) or that represent conceptual "archetypes" (Langacker 1991: 294). Goldberg, Casenhiser and Sethuraman (to appear) have been able to show that the earliest constructions children acquire designate basic patterns of experience. Linguistic constructions like those examined in this dissertation can thus be expected to code such cognitively privileged scenes, which are relevant to our everyday experience or reasoning and which help to actively make sense of our environment. Once such significant

events have been isolated and paired with a linguistic construction, they can be used as the basis for less prototypical event types (Croft 1991: 273; Goldberg 1995: 43; Langacker 1991: 295).

It is the task of linguistic research to reveal the meaning constructions that lie behind language data because "visible language is only the tip of the iceberg of invisible meaning construction that goes on as we think and talk" (Fauconnier 1997: 1). Language is an invaluable source of data when we want to gain a deeper understanding of the complex conceptual principles and mechanisms operative in our cognitive system (Fauconnier 1997: 2-4) because it "serves the *semiological function* of allowing conceptualizations to be symbolized by means of sounds and gestures" (Langacker 1999b: 14). The examination of the conceptualisations that underlie the RESULTATIVE, DEPICTIVE and QUALIFYING Constructions will be a modest contribution to this enterprise.

8.2.2 Comparing constructions on functional maps

Pivotal to the understanding of a syntactic construction is the nature of the symbolic link which relates its form and meaning, i.e. the question of how semantic relations are reflected in syntactic structure. Prototypically this link is iconic because, as has been suggested above, word order can aid the hearer in identifying a particular construction and the semantic relations underlying it. Despite the great variety of word-order rules across languages, syntactic structures are most frequently direct representations of semantic structures (Croft 2001: 236; Langacker 1987: 361; Lee 2001: 77). Of the constructions discussed in this book, the syntax of the RESULTATIVE Construction comes closest to directly reflecting the structure of experience. Care must be taken, however, not to stretch the notion of iconicity too far, because we are only talking about the relation between syntax and the semantic structure of an experience as conceptualised by our minds, not about some sort of homomorphism between language and reality as described by natural scientists.

It is one of the defining characteristics of language that it may not only provide an iconic or near-iconic mapping of experience, but that it can also be conducive to viewing the same experience from different perspectives or to highlighting various aspects of that experience (Croft 2001: 236; Goldberg 1995: 43; Langacker 1987: 39-40); this is, for example, one of the main functions of the DEPICTIVE Construction. Differences in information structure are systematic deviations from form-meaning congruities that allow speakers to impose that structure on a scene which is best adapted to their specific communicative purposes. Language is therefore not a device that merely encodes pre-existing cognitive concepts, but is one of the central tools helping to create and organise these concepts in the first place: "Conceptually, there are

countless ways of construing a given event ... Linguistically, a variety of grammatical devices ... [is] usually available as alternate ways of coding a given conception" (Langacker 1991: 294). The active function language performs in construing experience becomes even more evident when we turn from the encoding of experiences in the external world to the conceptualisation of mental reasoning processes. Mental construals, as we will see from the analysis of the QUALIFYING Construction, are frequently not dependent on an external model but are created and structured by the instruments of the cognitive system itself.

When the same experience can be construed in different ways, it does not make sense to deal with a specific syntactic construction in isolation. The semantic and pragmatic functions of a construction cannot exhaustively be described without taking into account the alternative conceptualisations provided by other constructions in the language. For a systematic comparison of the functions of related constructions, I will draw on the method employed in linguistic typology to map out functionally similar constructions on what is called a "conceptual space" there (Croft 2001: 8), and what I, more modestly, will name a 'functional map' because I am only looking at functional variation in English and not at conceptual universals. Syntactic constructions mark out areas on a functional map which can either be discrete or overlapping (Croft 2001: 92-4). As may be expected from the associative network model of the neurosciences, functional maps are multidimensional because the same construction can contrast with several sets of constructions along several functional dimensions.

It is a matter of general agreement in cognitive linguistics that constructions differing in form never express the same conceptualisation of experience, i.e. that they **must** define distinct regions on a functional map. This premise is known under various names, such as the "Principle of Contrast" (Croft 2001: 111), or the "Principle of No Synonymy" (Goldberg 1995: 67), but the form of argumentation behind it is basically the same: when there are two lexical items (words or constructions) in a language that conceptualise the same entity or event, language users will invariably attribute some sort of semantic or pragmatic difference to them. The Principle of Contrast is a corollary of the "Principle of Maximized Expressive Power" (Goldberg 1995: 68): distinct linguistic forms tend to be reserved for the expression of semantic and pragmatic differences in order to increase the communicative power of the language.

To conclude, Construction grammar does not describe syntactic and semantic building-blocks of a language plus the respective rules of combination. Instead, it examines the syntax and semantics of individual constructions and compares their specific functions in conceptualising experience to those performed by semantically related constructions. Since the concep-

tual explanation of a construction and its comparison to related constructions is a large-scale undertaking, I will devote most space to the RESULTATIVE and QUALIFYING Constructions, and restrict myself to a rather terse discussion of the DEPICTIVE Construction.

9. A force-dynamic account of the Resultative Construction

9.1 Introducing the model of force dynamics

The RESULTATIVE Construction (RC) is made up of four syntactic components: a SUBJECT NP, a VERB, an OBJECT NP, and a RESULTATIVE XP (172a). As a rule, the resultative phrase is realised by an AP (or, less frequently, a PP) when it expresses a property that holds of the OBJECT (172b, b'), but by an NP when it denotes a function or name attributed to the OBJECT (172c, c').[114]

(172) a. **[**[SUBJECT NP] [VERB] [OBJECT NP] [RESULTATIVE XP]**]**.
b. **[**[John] [painted] [the door] [**red**]**]**.
b'. **[**[John] [stabbed] [Bob] [**to death**]**]**.
c. **[**[The members] [appointed] [Mary] [**director**]**]**.
c'. **[**[The parents] [named] [their child] [**Peter**]**]**.

To come away with a deeper understanding of the RC, it is necessary to reveal the semantic relations underlying and tying together these four syntactic components. Loosely speaking, sentences instantiating the RC express the state that holds of the OBJECT-entity as a result of the action denoted by the verb (173).

(173) a. John washed <u>his shirt</u> *white*.
b. Mary pushed <u>the door</u> *open*.
c. The potter baked <u>the clay</u> *hard*. (from Jackendoff 1990a: 226)
d. The machinist filed <u>his chisels</u> *sharp*. (from Jackendoff 1990a: 226)
e. The gardener sprinkled <u>the shoots</u> *wet*. (from Randall 1983: 81)
f. John blew <u>his hair</u> *dry*.
g. Mary combed <u>her hair</u> *smooth*.
h. Bob sliced <u>the cheese</u> *thin*.

Discrete grammars do not usually provide a coherent semantic analysis of the RC and are, as we have seen, content to describe the putative syntactic relations obtaining between the constructional elements, such as the valency relation between the main verb and its arguments and the status of the resultative XP as a complement or adjunct. Since non-discrete grammars dispense with syntactic relations, they must look for the 'glue' holding together the elements of the RC in the semantics.

There are several approaches in modern linguistics which bring a focus to bear on the meaning of sentences instead of their syntax. To mention just one prominent representative of sentential semantics: event or situation semantics seeks to categorise sentences into distinct classes of events such as activities or states, and to closely explain the semantic structure of

[114] This categorial distribution holds almost exceptionless; cases in which a property is expressed by a (pre-modified) NP such as *Mary painted the barn **a pale shade of green*** are few and far between, and I know of no instances where a function or name could be realised by an AP.

these events (Pustejovsky 1995: 67-75; Saeed 1997: 107-8). This approach usually operates within the framework of formal or objectivist semantics (cf. 8.3), and is based on the assumption "that there are nonlinguistic things in the world corresponding to ... linguistic items ...: there are, in the world, events, processes, and states" (Parsons 1990: 20). A particular sentence thus refers to an exemplar of some event type in the world. The idea of describing the meaning of sentences in terms of non-linguistic events goes back as far as Aristotle and has been revived in the philosophical and linguistic literature since the 1960s (Parsons 1990: 34).

Rothstein has recently submitted a semantic analysis of the RC within an event-based framework, using the resultative sentence *Mary painted the house red* as an example (174) (2000: 253-4).

(174) $\exists e\,[\exists e_1\,\exists e_2\,[e = {}^{S}(e_1 \sqcup e_2) \wedge \mathrm{PAINT}(e_1) \wedge \mathrm{Ag}(e_1) = \mathrm{MARY} \wedge \mathrm{Th}(e_1) = \mathrm{THE\ HOUSE} \wedge \mathrm{RED}(e_2) \wedge \mathrm{Arg}_1(e_2) = \mathrm{THE\ HOUSE} \wedge \mathrm{PART\text{-}OF}(\mathrm{cul}(e_1), e_2) \wedge \mathrm{PAST}(e)]$

(from Rothstein 2000: 254)

Although Rothstein's semantic representation bristles with imposing symbols, the gist of it is actually quite easy to understand. At the risk of being long-winded, we can work through the above formula step by step. The event expressed by the sentence *Mary painted the house red* consists of two subevents e_1 and e_2, which are combined by a summing operation (^{S}) to yield the complex event e. The summing operation is conditioned by the PART-OF operator, which guarantees that the two events are not simply added together, but that they overlap, with the culmination point of e_1 becoming part of e_2. Both the subevents and the complex event are expressed by variables that are existentially quantified to make clear that the event type denoted by the sentence is instantiated by one specific, temporally and spatially bounded exemplar (cf. Parsons 1990: 23). PAINT and RED are the respective predicates of the two subevents, and they denote sets of 'painting' and 'be red' events. The predicates combine with a certain number of individuals participating in the respective events; those participants are assigned thematic roles illustrating the nature of their participation, such as AGENT (Ag), THEME (Th), or simply ARGUMENT (Arg). The conjuncts that add the thematic roles to the formula make it possible to define subsets of the set of events denoted by the verbs (cf. Rothstein 1998: 2), in this case the subset of painting events that have Mary as AGENT and the house as THEME, and the subset of 'be red'-events that have the house as ARGUMENT. The operator PAST at the end of the formula indicates that the sentence is true when the state of affairs expressed by it held true at some previous point in time (cf. Parsons 1990: 27-8). In plain, but stilted English, the logical translation of the resultative sentence *Mary painted the house red* conveys the following meaning: 'There was a particular event, which consisted of an event of Mary painting the house and an event of the house being red; the culmination of

the event of Mary painting the house was part of the event of the house being red, i.e. the house was red at the culmination of the painting event' (cf. Rothstein 2000: 254).

While Rothstein's analysis directly engages the meaning relations behind the RC and not just its syntax, it does not, in my judgement, furnish a satisfactory answer to the semantic subtleties and intricacies of resultative sentences. The meaning of the RC is formulated within a semantic framework that does not show any systematic connections with the syntactic form of the sentence and relies on unexplicated semantic primitives such as AGENT, THEME, and PART-OF. In particular, there is no necessary connection between *Mary* and *the house*, i.e. the fact that the house is changed by Mary's volitional action is only introduced via thematic roles; similarly, no necessary connection exists between the predicate *paint* and the predicate *red*, i.e. the fact that the house is red as a result of the action of painting is merely imposed on the semantics by the primitive PART-OF relation. The acceptance of such primitives could lead to the abandonment of the otherwise fruitful hypothesis that the semantics of a construction is a symbolic reflection of its syntactic form, i.e. that syntax and semantics are not two discrete systems that could each be described in its own terms, but form an interrelated symbolic whole. An intersystemically non-discrete approach would therefore not consign the interpretation of a sentence to some formal metalanguage, but attempt to reveal the symbolic relations holding between the syntactic and semantic components of the sentence in a conceptually plausible fashion (cf. figure 2 in 8.1.3).

I propose that the conceptual model underlying the RC is best described by the notion of 'force dynamics', which has been introduced into the linguistic literature by Talmy (1976) and expanded upon by Croft (1991: 162-3). Force dynamics is "one of the preeminent conceptual organizing categories in language" (Talmy 1988: 96), and expresses human beings' conceptualisation of causality as "individuals acting on individuals, with some notion of transmission of force determining which participant is 'first' in the causal order or causal chain" (Croft 1991: 162). The notion of force dynamics, which is widely used by cognitive linguists (e.g. Langacker 1999b: 46) and has been successfully applied to a variety of linguistic phenomena such as modal meaning (Talmy 1988), can be effectively used to elucidate the semantic relations behind the RC as well.

A force-dynamic event contains two participants, with one (the 'initiator') acting on the other (the 'endpoint'). Drawing on Talmy (1976), Croft develops a system of causation types modelled on the notion of force dynamics (1991: 167). In this system, four causation types can be differentiated on the basis of the status of the participants as physical or mental entities (table 9).

Table 9: Classification of force-dynamic causation types

Initiator	Endpoint	Causation Type
physical	physical	*physical*
mental	physical	*volitional*
physical	mental	*affective*
mental	mental	*inducive*

(from Croft 1991: 167)

In a physical causation type, a non-sentient entity acts on another non-sentient entity (e.g. 175a), while in a volitional causation event, a mental entity affects a physical entity (e.g. 175b). An affective causation type is the reverse of volitional causation because it refers to events in which a physical entity acts on a mental entity (e.g. 175c). Finally, an inducive event describes a situation in which a mental participant acts on another mental participant (e.g. 175d). It is important to note that force-dynamic relations do not describe real-world physical and psychological events, but pertain to commonsense notions of physical or psychological occurrences in our experience (Talmy 1988: 91-5).

(175) a. The ball hit the window.
b. John kicked the ball.
d. The buildings captured John's attention.
e. John persuaded Mary to stay.

The causation type relevant to the RC is volitional causation: in (172b), the mental entity *John* exercises his will to act on the physical entity *the door*. In (172b', c), both the initiators and the endpoints are sentient entities, but the endpoints do not act as volitional participants in the events: when John stabs Bob to death or the members appoint Mary director, Bob and Mary are simply acted upon by the SUBJECTS' actions and do not initiate any action of their own. In a similar vein, a sentence such as *John kicked Bob* (for 175b) would still constitute an instance of volitional causation.[115] Volitional causal chains can also be circular when the initiator is identical to the endpoint, i.e. when the first participant acts on himself or herself (176a, a') (cf. Croft 1991: 172), and they can be parallel when one initiator acts on two endpoints (176b) or two initiators act on one endpoint (176b') (cf. Croft 1991: 174).

(176) a. John painted himself red.
a'. Mary appointed herself director.

[115] The idea that certain objects belong to two taxonomic classes has been formalised by Pustejovsky's 'dotted types' (1995: 93). This notion may be illustrated with the example of a book, which can be both a physical object (*That book is heavy*!) and an information-bearing object (*That book is interesting*!), a double nature that is indicated by the following representation: [physical object ● information object]. Similarly, human beings are both volitional and physical entities and can therefore be represented as dot objects as well: [volitional object ● physical object] (see also Jackendoff 2002: 374).

b. John stabbed Mary and Bob to death.
b'. John and Mary appointed Bob director.

All of these sentences express a single resultative event that is abstracted from the network of occurrences in our experience. Note that the RC can only code one causally linked event: the action denoted by the VERB must directly cause the change of state of the OBJECT, i.e. "causation must be direct; no intervening time in a causal sequence is possible" (Goldberg 1991: 82). In other words, the RC *John scrubbed the pots shiny* cannot mean that John was involved in the activity of scrubbing the pots, but that the pots became shiny only after some intermediary time interval, or even that they became shiny only because Mary scrubbed them again afterwards (cf. Croft 1991: 160; Goldberg 1991: 81-2; Goldberg and Jackendoff, to appear). Two events that are causally or temporally unrelated must be expressed in two separate clauses: *John scrubbed the pots, and they became shiny after a few hours*; *John scrubbed the pots, and after Mary scrubbed them again, they became shiny*.

To arrive at an empirically reliable and conceptually convincing non-discrete description of the RC, it is necessary to examine which lexical items can be associated with the four roles of this construction. In the sections that follow, I will do this groundwork by elaborating on each of these conditions in relatively full detail. The various constraints on the roles of the RC should not be seen as a random assortment of isolated facts, but as systematically deriving from the force-dynamic semantics underlying the whole construction.

9.2 Constraints on the constructional slots of the Resultative Construction

9.2.1 The VERB-slot

We can begin by looking at the semantic classes of verbs that are tolerated or, conversely, not tolerated by the VERB-slot of the RC. One restriction that has frequently been noted is that the verb must not be stative (177a, b) (Demonte 1987: 3; Rothstein 2000: 260-1; Wechsler 1997: 308).

(177) a. *John **loved** Mary *crazy*. (from Rothstein 2000: 261)
b. *John **lives** with his parents *poor*.

Verbs appearing in the RC must be able to express an activity, because only activities can be interpreted as transmitting some kind of force from the SUBJECT to the OBJECT. Stative verbs, on the other hand, are restricted to constructions that express a homogeneous relation between two entities; a relation is homogeneous when it holds constant at all subparts of a certain interval. The hallmark of the RC, however, is that there is a dynamic relation between a SUBJECT and an OBJECT, in the sense that the OBJECT is changed by the SUBJECT's activity. Prototypically stative verbs such as *love* and *live* are primarily associated with constructions that

have "no a priori causal directionality" (Croft 1991: 219), and where the SUBJECT may therefore not be regarded as inducing some sort of change affecting the OBJECT.

Similarly, perception verbs cannot usually be associated with the VERB-slot of the RC (178a, b) (cf. Goldberg 1995: 181; Rothstein 2000: 261).

(178) a. *John **noticed** Mary *upset*. (from Rothstein 2000: 261)
b. *He **watched** the TV *broken*. (from Goldberg 1995: 67)

In contrast to situations expressed by stative verbs, the relation between *John* and *Mary* or between *He* and *the TV* is not necessarily homogeneous. Nevertheless, perception verbs such as *see*, *watch*, *taste* or *notice* do not normally express transmission of force, but a relation between an experiencer and a stimulus. *John* in (178a) cannot be seen as initiating an activity that could change Mary's mental state; rather, he simply reacts to the stimulus *Mary* in an event that does not have any duration to speak of. In (178b), the duration of the TV-watching event is more extended, but it is not the case that the SUBJECT *He* is the initiator of this event and the OBJECT *the TV* the passive endpoint. Constructions including perception verbs actually express "a two-way causal relation" because "the experiencer must direct his or her attention to the stimulus, and then the stimulus (or some property of it) causes the experiencer to be (or enter into) a certain mental state" (Croft 1991: 219).

Not all mental verbs are automatically barred from the RC, though. When the verb has a dynamic meaning component, it may well be associated with the VERB-slot of the RC (179a, b).

(179) a. John **frightened** Mary *to death*.
b. Medusa **stared** the hero *into stone*. (ROS: 20) (from Simpson 1983: 154, fn. 6)

In contrast to the sentences *Mary feared John* and *Medusa saw the hero*, which express two-way causal relations, the SUBJECTS of (179) can be interpreted as having more control over the respective event than the OBJECTS, and the OBJECTS can be understood as going through a change of state as a result of the SUBJECTS' (mental) actions.

What is of paramount importance, then, is that the elements occupying the VERB-role in the RC are "dynamic, i.e. require a continual input of energy if they are not to come to an end" (Comrie 1976: 13). There are few complications to this picture, though, because dynamic verbs do not constitute a uniform class. The most common verb typologies distinguish between at least two aspectual categories of dynamic verbs: while activities (or imperfective verbs), which are ongoing in time, denote undelimited events, accomplishments (or perfective verbs), which have a definite duration and an inherent endpoint, express delimited events (cf. Comrie 1976: 13; Huddleston and Pullum 2002: 52; Parsons 1990: 183; Tenny 1994: 4-5). Activities can thus be "protracted indefinitely or broken off at any point", whereas accom-

plishments "have a terminal point" when the situation "automatically terminates" (Comrie 1976: 44). There are a number of tests that are sensitive to the distinction between activities and accomplishments: the atelic durational phrase *for x time* normally occurs with activities (180a), but not with accomplishments (180a'), while the telic durational phrase or frame adverbial *in x time* is more at home with accomplishments (180b) than with activities (180b') (Mittwoch 1982: 115; Pustejovsky 1991: 61-2). Frame adverbials are felicitous with accomplishments because they measure the interval between the duration part and the culmination part of the accomplishment; activities, however, have no culmination and can therefore only be modified by an atelic durational. Similarly, when the adverb *almost* modifies an activity, we interpret the sentence to mean that the activity has not even started (180c); when it modifies an accomplishment, on the other hand, an ambiguity arises because either the activity has not started at all, or it has started but has not reached its culmination yet (180c') (Pustejovsky 1991: 71). *Almost* can thus modify either the culmination part of an accomplishment or both the duration and the culmination part, while an activity only has a duration part that is open to modification (Pustejovsky 1991: 71-2; see also Parsons 1990: 171). Lastly, while inferences between progressive and perfective versions of activity-sentences are valid, they are invalid for accomplishments (180d, d') (Parsons 1990: 169-70; Saeed 1997: 112). Activities have the "subinterval property" because "whenever they are true at a time interval, then they are true at any part of that interval" (Krifka 1998: 197): the activity *John is kicking the dog* therefore implies that John has kicked the dog during every subinterval of the kicking-event. The subinterval property does not hold of accomplishments, which consist of both a duration and a culmination component: when John is engaged in the activity of killing the dog, he has not killed the dog in every subinterval of this event but only at the culmination of the whole event. On the basis of these tests, we see that the RC clearly patterns with accomplishments, and not with activities (180e-e").

(180) a. John **kicked** the dog **for ten minutes**.
a'. ??John **killed** the dog **for ten minutes**.
b. John **killed** the dog **in ten minutes**.
b'. ??John **kicked** the dog **in ten minutes**.
c. John **almost kicked** the dog.
c'. John **almost killed** the dog.
d. John **was kicking** the dog. ⊃ John **has kicked** the dog.
d'. John **was killing** the dog ⊅ John **has killed** the dog.
e. John **painted** the door red **in an hour**/ ??**for an hour**.
e'. John **almost painted** the door red.
e". John **was painting** the door red ⊅ John **has painted** the door red.

Several linguists dealing with the semantics of the RC maintain that only verbs expressing accomplishments can be used in the RC because a resultative sentence such as (181a) denotes a delimited event, while "[a]ctivity verbs, which are inherently atelic and therefore cannot in

principle code a result state ..., do not take resultative predicates" (Van Valin 1990: 255). Since a verb such as *paint* can also be used as an activity verb (181b), a number of semanticists argues that *paint* in (181a) expresses an extended sense of the verb as an accomplishment and can therefore be used in the RC.

(181) a. John **painted** (*accomplishment*) the door red.
b. John **painted** (*activity*) the door.

The usual tenor of formalist grammarians is that every verb intrinsically belongs to one specific event type (Pustejovsky 1991: 55-6), and that there are lexical rules which systematically shift an activity verb into an accomplishment verb (Pustejovsky 1991: 64-5). Tenny, for instance, argues that resultative phrases "make their parent verbs into change-of-state of verbs" (1994: 37), and Rothstein maintains that "resultative predication can force an aspectual shift in an activity verb producing an accomplishment" (2000: 260). The lexical rule creating an extended accomplishment sense for an activity verb (cf. 182a) has been formalised in various ways. Levin and Rapoport, for example, engineer the argument structure of the extended verb sense with the help of their Lexical Subordination Rule (1988: 282), which has already been described in 8.1.3; the representation in (182b') roughly means that John causes the door to become red by performing the activity expressed by $paint_1$ (182b). A slightly different lexical representation of the extended sense of *water* in the resultative sentence *The gardener watered the tulips flat* has been proposed by Carrier and Randall. While the lexical structure of the basic activity verb $water_1$ can be represented as (182c), meaning 'The gardener caused water to come to be on the tulips', the "Resultative Formation" rule creates the extended accomplishment sense of $water_2$, which may be formalised as (182c') (Carrier and Randall 1993: 125). In plain English, the meaning of $water_2$ is "the gardener's watering the tulips caused the tulips to become flat" (Carrier and Randall 1993: 125). In contrast to Levin and Rapoport's Lexical Subordination Rule, the agent of the resultative/accomplishment sentence is thus thought to be not an individual, but the whole activity expressed in the basic sememe, with some special linking rules guaranteeing that the agent activity is only represented by the single NP *the gardener* in the syntax (Carrier and Randall 1993: 129; for other formalisations of the activity/accomplishment contrast, see Guéron and Hoekstra 1995: 99-101 and Randall 1983: 85-6).

(182) a. *paint*$_1$ (activity) ⇒ *paint*$_2$ (accomplishment)
b. *paint*$_1$: [*John* 'paint' *the door*]
b'. *paint*$_2$: [*John* CAUSE [*the door* BECOME (AT) *red*] BY *paint*$_1$].
c. *water*$_1$: CAUSE ([*the gardener*], [INC BE (WATER [$_{\text{PLACE-c}}$ AT [$_{\text{P}}$ ON *the tulips*]])])
c'. *water*$_2$: CAUSE ([*water*$_1$], [INC BE (*the tulips*, [$_{\text{PLACE-a}}$ AT [*flat*]])])

An important consequence of lexical rules changing an activity verb into an accomplishment verb is that the argument structure of the verb is also changed: while an activity verb is bivalent, requiring a subject and a direct object, an accomplishment verb is trivalent, subcategorising for a resultative phrase in addition to the subject and object arguments. The activity verbs *paint*$_1$ and *water*$_1$ take only two arguments, yet the accomplishments *paint*$_2$ and *water*$_2$ require the additional resultative arguments *red* and *flat*, respectively. Along the same lines, Simpson contends that the sentence *John hammered the metal* contains the bivalent activity sememe of the verb (183a), while *John hammered the metal flat* is an instance of the trivalent accomplishment sememe (183a') (1983: 148-9).

(183) a. *hammer*$_1$: <hammerer (Subject), thing hammered (Object)>
a'. *hammer*$_2$: <hammerer (Subject), thing hammered (Object), result (Xcomp)>
(from Simpson 1983: 148-9)

The lexical-rule approach, which is used by grammarians to defend the idea that the sentence is built up from the verb, is fraught with difficulties (cf. 8.1.3). It is, as we have seen, a circular approach because the only basis for ascribing different senses and valencies to verbs is their appearance in different syntactic contexts. In a non-discrete framework, it is not necessary that "the verb in isolation" (Wechsler 1997: 308) can be established as an activity or an accomplishment. As some grammarians have pointed out, the distinction between aspectual verb classes does not depend on the verb alone, but on the whole verb phrase (Comrie 1976: 45-6; Parsons 1990: 38-9). A Construction-grammar framework goes even further and claims that the meaning of a verb such as *paint* can be kept constant across different syntactic environments, and that the activity or accomplishment semantics of sentences such as (181a, b) must be attributed to the meaning of the respective constructions. Since an RC always denotes an event in which one entity is changed through the force transmitted by that entity, its meaning is necessarily that of an accomplishment. By the same token, non-discrete syntax does not distinguish between valencies of verbs in isolation. The SUBJECT, OBJECT, and RESULTATIVE phrases are not arguments of the verb, but are, like the verb itself, roles within the RC.[116]

[116] In an alternative approach that retains argument structures for verbs, the argument structure of a resultative sentence "is determined by the composite effects of the verb and the construction"; in a particular sentence, the arguments of the construction and the arguments of the verb get fused (Goldberg and Jackendoff, to appear). A more radical constructional approach does not work with independent argument structures for verbs, but that does not mean that the concept of valency must be relinquished altogether. Without a doubt, constructional roles differ as to whether they are referential and denote a participant in the event, or predicative and express a relation

The need for constructions is also accepted by a generative grammarian like Jackendoff, who criticises the lexical-rule approach that posits additional accomplishment sememes for intransitive activity verbs: "To say this is in the lexicon in the sense 'stored in long-term memory' makes the otiose claim that every appropriate verb carries around yet another argument structure frame" (2002: 176). Rather, he asserts that "the lexicon contains an idiomatic resultative construction" that is "a lexical item in its own right that undergoes free combination with verbs" (2002: 176). By rejecting syntactic and semantic discreteness with respect to resultative sentences, Jackendoff comes very close to a Construction-grammar account. There is a point where his account parts company with the analysis of resultative sentences proposed here, though: Jackendoff works in an intersystemically discrete framework because he presupposes separate levels for syntactic and semantic representations. Syntax and semantics do not form an interrelated functional whole in his framework, but are treated as separate systems that are only partially related by interface rules (cf. 8.1.2). (184a) presents his and Goldberg's syntactic representation of the RESULTATIVE Construction, which consists of a subject, a verb, a postverbal NP and an AP. When we take the sentence *The gardener watered the plants flat* as an example, the semantic representation in (184b) reads as follows: there is an event in which an entity X ('the gardener') causes the event of an entity Y ('the plants') to come to be in a certain state Z ('flat'). This causative event is modified by a means event: the event of the gardener's watering the plants is the means by which the main event (the gardener's causing the plants to become wet) comes about. To simplify greatly, Jackendoff and Goldberg's semantic structure conveys the sense that the gardener caused the plants to become wet by watering them. In order to bring together the syntax and the semantics of the resultative construction, Goldberg and Jackendoff suggest correspondence rules, which relate some elements in the syntactic representation with some elements in the semantic representation (these relations are shown by indices on the respective elements) (to appear).

(184) a. Syntax: NP_1 V NP_2 AP_3
b. Semantics: X_1 CAUSE [Y_2 BECOME Z_3]
MEANS: [*verbal subevent*]

(from Goldberg and Jackendoff, to appear)

Goldberg and Jackendoff's semantic representation is much more complex than the syntax of resultative sentences suggests because it consists of a main event (the "constructional subevent") and a modifying means event (the "verbal subevent"). Only a loose fit can be

between participants. It would lead us too far afield to describe the concept of valency in ways that are palatable to Construction grammar here. A good reassessment of the notions 'predicate' and 'valency' from a cognitive point of view, which also allows for gradience and prototypicality, has been provided by Langacker, for instance (1987: 277-327).

found between syntax and semantics in (184): the main verb in the syntactic representation is demoted to a position in the modifying verbal subevent, and the predicate of the main constructional subevent is the abstract operator CAUSE. There are also many elements in the semantic structure that do not have a counterpart in the syntax, such as the operators CAUSE, BECOME and MEANS. Goldberg and Jackendoff's semantic representation consorts ill with a strictly functional approach because it does not seem to describe the semantics of the resultative sentence *The gardener watered the plants wet*, but rather the semantic relations behind the paraphrase *The gardener caused the plants to become wet by watering them*, which Jackendoff and Goldberg argue to underlie the resultative sentence. Although the jury is still out on the issue of intersystemic discreteness, functional grammars consider it more adequate to treat syntactic and semantic elements as symbolic units, and they therefore neither allow the high degree of non-isomorphism between syntax and semantics evident in (184), nor the use of abstract operators. The extralinguistic model of force transmission is a way of achieving a maximally close fit between syntax and semantics. The controversy over intersystemic discreteness vs. non-discreteness aside, both Goldberg and Jackendoff's and my account share the view that it is not the verb in isolation, but the whole construction that is responsible for the resultative semantics. What is necessary is that the verb can denote transmission of force, not that it is an accomplishment in isolation.

Not every dynamic verb that can express transmission of force is compatible with the RC, though. There is a clearly circumscribed aspectual class of dynamic verbs in English that cannot fill the VERB-slot of the RC. In (185a), John was involved in the activity of drinking his coffee, and the event was finished when the coffee was completely consumed. The verb *drink*, however, is not licit in an RC such as (185a'), meaning that John drank his coffee until it got cold. Similarly, in (185b) Mary was engaged in the activity of building a house, which terminated when the house was complete; again, *build* is incompatible with the RC (185b') and cannot be used in a sentence conveying the sense that Mary built a house until it was big.

(185) a. John drank his coffee.
a'. !John drank <u>his coffee</u> *cold*.
b. Mary built a house.
b'. *Mary built <u>a house</u> *big*. (ROS: 88)

The entities filling the OBJECT-slots in the construction illustrated by sentences (185a) and (185b) measure out the events referred to by the verbs *drink* and *build* by providing a scale along which the event progresses over time until the endpoint of the scale has been reached (Tenny 1994: 94-5). For verbs of consumption (e.g. *drink* or *eat*) this is the point when the referent of the OBJECT has been completely consumed; for verbs of creation (e.g. *build* or *draw*), it is the point when the referent of the OBJECT has been completed. For verbs of per-

formance such as *sing* (*an aria*) or *play* (*a game of chess*), to mention another related semantic verb class, the terminal point is reached when the entity in the OBJECT-slot has been completely 'passed through' (Tenny 1994: 17-8). The construction instantiated by sentences such as *John ate an apple* and *Mary built a house* can be called INCREMENTAL-THEME Construction because "increments of the house or the apple, as they are created or consumed, correspond to the temporal progress of the event. Moreover, there is a final increment which marks the temporal end of the event" (Tenny 1994: 15). In other words, material increments of the entities in the OBJECT-slot are associated with temporal increments of the activities denoted by the verbs up to a final increment of the entity that corresponds to the temporal end of the event (Krifka 1998: 213; Tenny 1994: 18).

Caution must again be taken to associate the incremental-accomplishment meaning not with the verbs in isolation, but with the semantics of the INCREMENTAL-THEME Construction as a whole. It is an important characteristic of this construction that the OBJECT-slot must be filled by quantified NPs such as *an apple* or *two houses* because only quantified NPs are spatially bounded and therefore possess a final increment. Since verbs such as *eat*, *build* or *read* may also be found in constructions that express undelimited activities such as *John likes eating ice cream*, *Mary builds houses as a profession* or *John is reading in the garden* (Mittwoch 1982: 114; Tenny 1994: 44), it cannot be the verbs in isolation that inherently express incremental accomplishments, but the combination of the verb and the construction it appears in.

When *paint* and *eat* are both found in activity and accomplishment constructions, the question automatically arises why the canonical accomplishment construction for *paint* is the RC, while the typical accomplishment construction for *eat* is the INCREMENTAL-THEME Construction. The association between a lexical item and a constructional role is based on the degree of semantic compatibility between the lexical item and the construction. Verbs such as *build* (*a house*) or *eat* (*an apple*) have traditionally been said to take 'effected objects' which are created or consumed during the event (Schopf 1976: 29), while verbs such as *paint* (*the door*) or *wipe* (*the table*) take 'affected objects', which are only changed with respect to some specific property during the event. The force denoted by *paint* and *wipe* only changes a particular aspect of the entity in the OBJECT-slot, while the force expressed by *eat* and *build* 'goes through' the entity in the OBJECT-slot as a whole, consuming or creating it by increments in the process. While verbs that can be associated with the RC must be able to express a force that can change the property of an entity, with the new instantiation of the property being named by the RESULTATIVE phrase (186a, a'), verbs that can be associated with the INCREMENTAL-THEME Construction need to denote a force that can pass through increments of an

entity. Verb particles such as *up* or *through* are a close analogue of the RESULTATIVE phrase in the INCREMENTAL-THEME Construction because they underscore the fact that the end of the scale denoted by the entity in the OBJECT-slot has been reached at the end of the event (186b, b') (Green 1973: 272; Kilby 1984: 103; Tenny 1994: 36-7). Alternatively, the final increment can also be explicitly mentioned in a prepositional phrase (186c, c') (Tenny 1994: 74).

(186) a. The farmer **ground** the corn **fine**.
a'. Mary **pounded** the pancake **flat**.
b. John **ate** the apple **up**.
b'. Mary **read through** the magazine.
c. John **ate** the apple **to the core**.
c'. Mary **read** the magazine **to the final page**.

Overall, then, verbs that can fill the VERB-slot in the RC are not usually found in the VERB-slot of the INCREMENTAL-THEME Construction and vice versa. Only verbs that can direct the force they express onto a specific property of an entity are compatible with the RC, while verbs that target an entity as a whole, thereby incrementally creating, consuming or passing through it, are commensurate with the INCREMENTAL-THEME Construction.[117]

One final constraint on the activity expressed by the verb needs mentioning. In addition to activity and accomplishment verbs, event grammarians also distinguish so-called achievement verbs. Achievement verbs do not have any internal temporal structure and may therefore be described as accomplishments without the duration component, i.e. the change of state expressed by them happens instantaneously (187a) (Parsons 1990: 24; Tenny 1994: 5). Achievements are consequently not felicitous with the progressive aspect and can be modified by point adverbials (187b, b') (Parsons 1990: 35-6; Pustejovsky 1991: 50). Let me stress again that it is not the verb by itself that is responsible for the achievement semantics, but that this meaning rather depends on the construction the verb appears in (cf. 187c and c').

(187) a. John **reached** the summit.
b. ??John **was reaching** the summit.
b'. John reached the summit **at noon**.
c. Grandpa **died at noon**.
c'. Grandpa **was dying for months**.

While *reach* and *die* do not express transmission of force, achievement verbs such as *break* or *explode* do. Such verbs are nevertheless rare in the RC because resultative sentences typically code a situation where the SUBJECT acts on the OBJECT for an extended period of time before

[117] The sentence *He ate the apple whole*, which Green (1970: 272) mentions as a secondary-predicate construction, is not a counter-example: *whole* does not denote a property that holds of the apple at the end of the eating-event, but merely underscores the fact that the apple has been completely consumed. It is therefore functionally similar to the particle *up* (cf. *He ate the apple up*). The sentence *Sue read the magazine to tatters* is slightly more complicated to explain, but can be handled by the notion 'dot object' (cf. footnote 115). A magazine is both an information-bearing entity and a material object. As the former, it appears in the INCREMENTAL-THEME Construction (*Sue read through the magazine*), but as the latter, it can be found in the RC (*Sue read the magazine to tatters*).

a property of the OBJECT is changed, while *break* and *explode* denote instantaneous changes. (188a, b) may nevertheless be regarded as unprototypical instances of the RC.

(188) a. John broke the window *to pieces*.
b. ?The soldier exploded the bomb *to pieces*.

Taking stock: verbs that can be associated with the RC must have a dynamic meaning component, and not denote a homogeneous, stative relation between two entities; the dynamic meaning component must be able to express the asymmetry that inheres in the notion of transmission of force, and not denote a two-way causal relation; the verb's activity should last through an extended period of time so that the SUBJECT's extended activity may be construed as changing the OBJECT after some time; last but not least, the force expressed by the verb must be directed onto a specific property of an entity in the OBJECT-slot, and not 'pass through' increments of the entity as a whole. Verbs that are prototypically associated with the RC such as *wipe* or *paint* consequently express dynamic, asymmetrical activities that can last for an extended period of time and target a specific aspect of an entity.

9.2.2 The SUBJECT and OBJECT-slots

The property expressed by the RESULTATIVE phrase can only refer to the entity in the OBJECT-slot (189a), but not to that in the SUBJECT-slot (189b). Neither is there a corresponding intransitive RC in which the changed property might apply to the SUBJECT in the absence of a competing OBJECT-entity (189c).

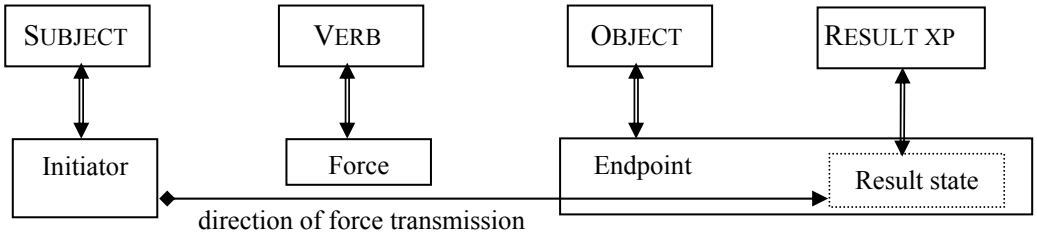
(189) a. The waitress wiped all the tables *clean*.
b. *The waitress wiped all the tables *to exhaustion*.
c. *At his wedding, he smiled *sore*. (from Goldberg 1995: 181)

Syntactically discrete accounts have argued that resultative sentences are subject to what Levin and Rappaport-Hovav have dubbed the "Direct Object Restriction" (DOR) (1995: 34). According to the DOR, a typical resultative sentence constitutes an "object-oriented transitive-based pattern" (Rappaport-Hovav and Levin 2001: 767), and may therefore not contain a resultative predicate that is subject-oriented as in (189b); since the DOR requires a resultative phrase to be predicated of a direct object, resultative sentences may not be realised by intransitive-based patterns such as (189c), either (cf. also Aarts 1995: 84-5; Simpson 1983: 144-5; Staudinger 1997: 79; Tenny 1994: 58). While the DOR is a purely syntactic explanation of the restrictions evident in (189) because it asserts that "the NP which a result XP can be predicated of is determined solely by its grammatical function — direct object — and not in terms of its semantic role" (Levin and Rappaport-Hovav 2001: 769), other grammarians couch the restriction in semantic terms and speak of, for instance, an "Affected Theme Restriction" (Wechsler 1997: 308). This modification is more cosmetic than substantial, however, because neither the

DOR nor the Affected Theme Restriction is derived from any more general principles and must therefore be introduced as a primitive syntactic or semantic constraint on the RC. Simpson, for instance, hypothesises that the requirement that the resultative phrase must refer to the direct object is a "language-particular restriction" because there does not seem to be any general reason prohibiting sentences such as (189b, c); in fact, she argues, these sentences are not semantically anomalous because they could be rephrased with *until*-clauses (1983: 144): *The waitress wiped all the tables until she was exhausted* and *At his wedding, he smiled until he was sore*.

The model of force dynamics that is proposed to underlie the semantics of the RC provides a straightforward explanation for the constraint that only the entity in the OBJECT-slot, but not that in the SUBJECT-slot, can be changed by a resultative event. Transmission of force is an asymmetric relation, with one entity, the initiator, acting on another entity, the endpoint (Croft 1991: 173). The order of the syntactic components mirrors the order of the entities in the force-dynamic semantic event because the SUBJECT must be placed before the OBJECT in syntax. Figure 3 illustrates how the syntactic components of the RC are aligned according to the force-dynamic semantic relations behind them (symbolic relations are indicated by the double arrows): the SUBJECT-slot codes the initiator or force transmitter of the resultative event; the VERB-slot contains a dynamic verb expressing the force transmitted from the initiator (dependent on the restrictions detailed in 9.2.1), and the OBJECT-slot hosts the endpoint or force recipient, i.e. the entity that serves as the target of the transmitted force and is changed by it.

Figure 3: Model of force dynamics underlying the typical RESULTATIVE Construction



The RC is an instance of volitional causation (cf. 9.1) because the initiator is typically a volitional, i.e. human or at least animate entity that is able to translate his or her will into physical or mental force: "The will is the source (ultimate cause ...) of the force and therefore is clearly the initiator, not the endpoint" (Croft 1991: 171). The endpoint is formed by a physical entity that is the recipient of the transmission of energy initiated by the volitional force-transmitter. The asymmetry shown by the RC, where the force-transmitter must be aligned with the SUBJECT and the force-recipient with the OBJECT, is thus a direct reflection of our commonsense view of causality in which entities are not usually changed when they initiate an action, but

only when they are acted upon by another entity. The DOR and the Affected Theme Restriction consequently receive a more general conceptual explanation in the framework of force dynamics: only (189a) is compatible with the causal chain illustrated in figure 3, while the other two sentences would code events in which the force-transmitters direct energy onto another entity (189b) or onto no entity at all (189c), and are changed themselves in the process. Such configurations contradict our commonsense notion of causality and are therefore not coded by a specific linguistic construction. Simpson's *until*-sentences can bring out such meanings, but only by using a combination of two clauses: *He smiled until he was sore* expresses two events, the activity *He smiled* and the temporally subsequent categorical predication *he was sore*, but this complex meaning cannot be conflated into a single causal event structure such as that encoded by the RC.

When undertaking to formulate a non-discrete analysis of the RC, I attempt to refrain from as many *a priori* theoretical commitments as possible, even when they concern notions hallowed by tradition such as 'AGENT' or 'THEME'. Rather, I intend to start with only the bare outlines of a semantic theory and develop my analyses in the best way possible to account for the data. Discrete grammars typically regard thematic roles as semantic primitives that must be listed along with the verb in the lexicon, and that are mapped in predictable ways onto syntactic slots in the syntactic representation of the sentence (Givòn 1993: 90; Tenny 1994: 182). The central questions that have concerned linguists since the idea of thematic roles was first proposed are "(1) what thematic roles are there? and, (2) how do we tell which NPs have which thematic roles in a given case?" (Parsons 1990: 73). The discrete research programme cannot answer these two questions in a principled, theory-independent and unopportunistic fashion. There have been conflicting conclusions on the number of thematic roles that should be assumed: while Van Valin identifies just two macro-roles, ACTOR and UNDERGOER (1990: 226), Parsons distinguishes between six thematic roles (AGENT, THEME, GOAL, BENEFACTIVE, INSTRUMENT, EXPERIENCER) (1990: 73-4), and "each type may have finer and finer sub-types, *ad infinitum*" (Givòn 1993: 91). There does not seem to be any empirical way of defining the right level of specificity for the identification of thematic roles because, as with any putatively discrete entity, a sharp delimitation fails to emerge between them (Tenny 1994: 183). It has proved similarly impossible to agree on question (2), the right mapping between thematic roles in the semantics and NPs in the syntax of a sentence, no matter if the linking rules are based on semantic features (e.g. 'the entity with the greatest number of AGENT-characteristics maps onto the subject') or thematic hierarchies (e.g. 'the highest role in the hierarchy maps onto the subject') (cf. Saeed 1997: 152-3; Tenny

1994: 118-9). Although there have been grand schemes such as the 'Universal Alignment Hypothesis' in Relational Grammar and the 'Universal Theta Assignment Hypothesis' in GB, which assert that there exist general, universal principles that map thematic relationships onto structural relationships (cf. Tenny 1994: 117; Wechsler 1997: 312), these have been largely programmatic claims that are met with countless distributional mismatches. Unless a fixed set of primitive thematic roles along with a rigidly defined syntax-semantics interface can be established, such hypotheses make at best speculative, and at worst blatantly false claims about the putative syntax-semantics interface.

In view of these problems, the utility of thematic roles for a theory of grammar has been questioned, and a number of linguists have argued that such roles should be dispensed with altogether (cf. Tenny 1994: 183). A Construction-grammar framework offers a somewhat different slant on the notion 'thematic role' because it disputes that there is a rigidly definable number of thematic roles that have a cross-constructional claim to reality; rather, thematic roles do not seem to exist independently of the specific constructions that instantiate them. Looked at in this way, it is possible to identify the initiator of the RC as an AGENT and the endpoint as a PATIENT, but these semantic roles would be defined exclusively with respect to the RC, in the same way that the syntactic elements SUBJECT and OBJECT are defined as constructional roles. The AGENT of the RC has many of the features that are prototypically associated with the discrete thematic role AGENT: it is a volitional, usually human entity that initiates an event by transmitting some kind of force. Similarly, the PATIENT is associated with many of the characteristics of the thematic role PATIENT: it is a physical entity that receives the force transmitted from the AGENT and undergoes a change of state as a result. In Construction grammar, these semantic features are not derived from some abstract catalogue of thematic-role characteristics, but are directly abstracted from the meaning of the RC. The asymmetric semantics of the force-dynamic event also explains the alignment of the AGENT with the SUBJECT and of the PATIENT with the OBJECT, as well as prohibiting in a principled way that both participants of the RC could be AGENTS or PATIENTS.

The RC does not refer to some causal chain in the real world, but codes the way we conceive of causal relations in everyday reasoning. The asymmetry between initiator and endpoint in the model of force dynamics is part of "language-based conceptualizing", but "has no counterpart in physical theory" (Talmy 1988: 91). The network of causality in the physical or mental world is extremely complex, and cannot be reduced to single events in which one entity is clearly the active initiator and another entity is clearly the passive endpoint. The RC is based on a form of naive physics or naive psychology and performs the vital function of cate-

gorising the highly complex and confusing network of occurrences in reality into separate causal events (Talmy 1988: 92-3). Similarly, there is no way of objectively determining the right degree of specificity for the entities in the SUBJECT or OBJECT-slots: why should the waitress be referred to as the force transmitter who wipes the table, and not her arm, her hand, the cloth, the combination of cloth and water, etc.? The reason why the linguistic representation of force-dynamic events refers to basic-level concepts such as human beings as initiators, and basic-level objects such as *the table* as endpoints can be explained with the notion of 'granularity': "The concept of levels of granularity in conceptualizing 'objective' reality allows one to ignore finer-level semantic details in lexical analysis when they are irrelevant to the conceptualization of the event" (Croft 1991: 164). The RC thus constitutes an Idealized Cognitive Model in Lakoff's sense (1987: 68) because it describes an idealised causal chain with idealised participants, which lends itself well to everyday conceptualisation.

The exact activities the force transmitter performs when acting on another entity are usually underspecified: in (190a), we learn that Mary performed some 'wiping'-activity, but we do not know if she wiped the table with a cloth, a sponge or with her hand, if she used water or not etc. The activity performed by John in (190b) is even more underspecified because we are not told if John broke the vase accidentally or on purpose, if he let it drop or kicked it with his foot etc. (cf. Tenny 1994: 86-7).

(190) a. Mary wiped the tables clean.
b. John broke the vase to pieces.

Most constructions allow some degree of elaboration on their semantics, however. Although the exact activities of *Mary* and *John* in the resultative events of (190) are underspecified, they can be detailed in an optional fifth constructional role, the INSTRUMENT-slot, which is placed after the RESULTATIVE phrase (191).[118] Our commonsense view of the world tells us that Mary and John did not perform their respective activities mentally by some sort of telekinesis, but that there must have been some intermediate participants such as body parts or instruments, which are "conceptualized as extensions of the agent's body" (Croft 1991: 170). The INSTRUMENT-role is placed at the end of the construction although it comes before the ENDPOINT in the conceptualisation of the causal chain ('Mary, using a sponge, wiped the tables clean') (cf. Croft 1991: 185). This non-iconicity between the order of the participants in

[118] In a generative framework, Pustejovsky calls such arguments, which "participate in the logical expressions ..., but which are not necessarily expressed syntactically", 'default arguments' (1995: 63). In a descriptive framework, Allerton likewise points to a type of argument that need not appear in the sentence as long as it is "recoverable from the (linguistic or situational) context" (1982: 34). Construction grammarians call this phenomenon "free null instantiation" (Croft 2001: 276). Free null instantiation "is not really associated with any particular construction", but "is simply the principle that any component of the semantic structure of a construction that is left unspecified ... is interpreted freely" (Croft 2001: 278).

the force-dynamic event and the linear order of the constructional roles can be explained by information structure: instruments are not usually mentioned explicitly in a resultative event because they carry less significance than the initiator and the endpoint and can frequently be inferred from the context (Talmy 1976: 94-5), but when the speaker insists on mentioning them, they are typically informationally salient and therefore rightly placed at the end of the sentence.

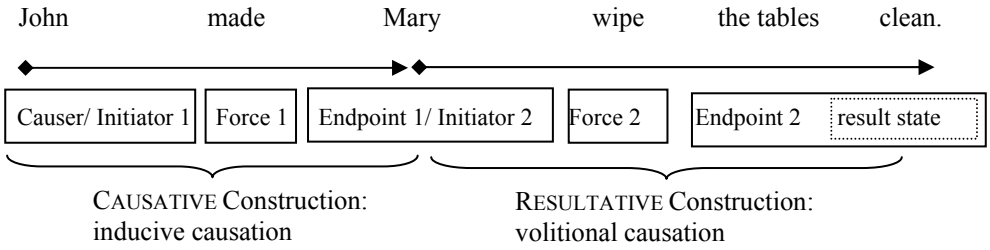
(191) a. [Mary] [wiped] [the tables] [clean] [with a sponge].
b. [John] [broke] [the vase] [to pieces] [with his fist].

Another sort of constructional elaboration is provided when the RC is combined with the CAUSATIVE Construction. A causative situation can be defined as a "causal correlation between two events", one of which is the "causing event" and the other the "caused event" (Kulikov 2001: 886). The CAUSATIVE Construction consists of three slots: a CAUSER NP, a CAUSATIVE verb and the CAUSED EVENT, which is a construction in itself and can be filled by, for example, the RC (192a, b).

(192) a. [CAUSER NP] [CAUSATIVE verb] [CAUSED EVENT].
b. **[**[John] [made] [[Mary] [wipe] [the tables] [clean]]**]**.

A CAUSATIVE Construction conveys the sense that the CAUSED EVENT would not have taken place if it had not been for the event initiated by the CAUSER (cf. Talmy 1976: 51). Thus, a causative situation consists of two force-dynamic events: the volitional-causation event of, for example, the RESULTATIVE Construction, and the inducive-causation event (cf. table 9) of the CAUSATIVE Construction (cf. Talmy 1976: 52-4). The CAUSER is typically a mental entity that acts on another mental entity, in this case the initiator of the RC, who in turn acts on a physical entity, the endpoint of the RC. These force-dynamic relations behind a causative situation are illustrated in figure 4:

Figure 4: Model of force dynamics underlying a causative situation



The research on how constructions can be elaborated upon and combined with other constructions is still in its infancy, and the above remarks on the INSTRUMENT-role and the merger of the CAUSATIVE and RESULTATIVE Constructions may serve as first tentative illustrations. In

the following section, we turn to the constraints on the RESULTATIVE phrase, which have remained largely intractable to discrete grammars.

9.2.3 The RESULTATIVE-slot

The dynamic force coded by the VERB changes the OBJECT-entity in one of its properties. To understand the relation between force transmission and change of property, we must briefly look at how ontological entities are constructed mentally. Since it would take us too far afield to go into complex linguistic or psychological theories on this issue, I will restrict myself to a few cursory remarks, mainly drawing on Kaufmann (1995) and Pustejovsky (1995).

A mental schema of an ontological entity represents a systematic conceptualisation of the features of this entity, which could be formalised along the lines of Pustejovsky's qualia structure (1995: 85-104). Of the four different quales Pustejovsky differentiates, the "constitutive" and "formal" quales are most significant in our context because they are responsible for information on the structural attributes of an entity (1995: 85-6). The constitutive and formal quales define the set of property dimensions that are characteristic of a specific kind of entity; an important subset of these property dimensions is defining in the sense that it is "necessary for the conceptualization of an object" (Kaufmann 1995: 380). Defining property dimensions fall into three categories. Some dimensions can only be set in one particular way for a certain kind of entity; for the class of balls, for example, the dimension 'shape' must necessarily be set to the property 'round'. Other property dimensions can have more variable instantiations, but only a particular one for every element of the kind; some balls may be made of leather and others of rubber, but the setting of the property dimension 'material' is fixed for every individual member of the class of balls. The third kind of defining property dimension is of prime concern to our discussion. Entities are also endowed with properties that can have different instantiations at different points in time along a certain scale. The same ball may, for instance, be white at one point in time but grey at another: "The specific instantiations of the object defining properties ... define the constitution of the object at a specific point in time" (Kaufmann 1995: 381). An important consequence is that "any change affecting a specific object defining property may only lead to another quality (or 'instantiation') of this property" (Kaufmann 1995: 380). In other words, defining properties must always be displayed by an entity in some way, i.e. a ball cannot not be of a certain colour, for example. In addition to defining properties, there are also optional properties that an entity of a certain kind may or may not display at some point in time; such properties are optional because "if an individual object lacks them, no consequences follow for its specific objecthood, even though it may potentially display them" (Kaufmann 1995: 386). 'Angry', for instance, is an optional property for

human beings because it is not associated with a specific parameter that must always be set in some way or other.

The RESULTATIVE phrase encodes the new setting of a property dimension which holds of the OBJECT-entity at the end of the resultative event. The linear position of this phrase after the OBJECT iconically reflects the order of a causal event as conceptualised by language: the initiator acts on the endpoint by transmitting some energy onto it, and the endpoint manifests a new property as a result of this transmission of force. Linguists dealing with resultative sentences have continuously been troubled by the "apparently idiosyncratic restrictions" conditioning the properties that can be expressed by the RESULTATIVE phrase (Green 1972: 83; see also Rothstein 2000: 263). (193) gives an impression of these restrictions: while (193a, b, c) represent acceptable instances of the RESULTATIVE Construction, the properties expressed by the RESULTATIVE phrases in the primed examples render the respective sentences ill-formed.

(193) a. He painted the door red.
a'. *He painted the door sticky. (ROS: 73)
b. He hammered the metal flat.
b'. *He hammered it beautiful. (ROS: 100) (from Green 1972: 84)
c. John wiped the table clean.
c'. *He wiped it stained. (ROS: 93) (from Green 1972: 84)

These constraints have mystified syntacticians since Green first noticed them:

> Wiping objects with damp, dirty, or stain-filled rags are not unusual activities, and one expects the objects to become damp, dirty, or stained, respectively, as a result. Yet speakers have firm and clear intuitions that sentences like ... [193c'; H.S.] are ungrammatical. What do they know about these constructions that permits them to make these judgements without hesitation? (Green 1972: 89).

Discrete grammars have approached this problem by arguing that the main verb subcategorises for the resultative property as one of its arguments and therefore places selectional restrictions on it. As has been illustrated with respect to all four discrete approaches in part I, a complement/adjunct account cannot be applied to the RESULTATIVE phrase in an unopportunistic fashion because this element fulfils both typical adjunct criteria such as omissibility and categorial realisation by an AP, and typical complement criteria such as the fact that it is semantically restricted and that only one resultative phrase is possible in a given sentence (cf. table 4 in 4.1.4).

The complement/adjunct distinction is immaterial to a non-discrete framework because a "construction-grammar analysis of government and subcategorization eliminates the directionality that supports the head-dependent or even functor-argument asymmetry" (Croft 2001: 247). The RESULTATIVE phrase is not a complement of the main verb or an adjunct in the sentence, but is a role of the RESULTATIVE Construction. As a consequence, restrictions on the lexical items that can be associated with this role must be explained in terms of the semantics

of the construction as a whole. This holistic perspective allows a rather straightforward explanation of the situation sketched in (193): the VERB denotes transmission of force, and it specifies onto which dimension of the OBJECT-entity the energy is directed. *Paint* describes some force that is directed onto the colour dimension of a material object; *hammer* identifies energy that is targeted at the shape of an entity, and *wipe* denotes transmission of energy onto the surface of a material object, which is, among other things, characterised by a dimension specifying its degree of cleanness. The RESULTATIVE phrase denotes the new instantiation of the property dimension after transmission of force has taken place: *the door* in (193a) must have been changed with respect to its colour dimension; *sticky*, however, does not describe a colour and can therefore not be the canonical result of the transmission of force expressed by *paint*, even if it is a common side-effect of painting. Similarly, the activity of hammering makes the shape of an object flat (193b); the object may well be more beautiful than before it has been hammered, but this aesthetic quality is not a property that belongs to the shape-dimension. Things are a little more complicated with (193c) because *stained* does denote an instantiation of the cleanness-dimension. Yet transmission of force is inherently directional, so the activity specified by *wipe* can only change the setting of the cleanness-dimension in one direction, in this case towards the 'clean'-pole. The property expressed by the RESULTATIVE phrase must therefore be compatible both with the property dimension that the force denoted by the verb applies to, and with the direction of this force. While the noun in the OBJECT-slot denotes a kind of entity and evokes the property-dimensions that are potentially associated with it, the activity expressed by the verb profiles or activates one of these dimensions by directing its energy onto it.[119] The property denoted by the RESULTATIVE phrase must then be compatible with this profiled dimension of the force recipient.

The force-dynamic semantics of the RESULTATIVE Construction, coupled with a notion of how ontological entities are mentally represented, helps us to achieve a systematic characterisation of the semantic constraints on the RESULTATIVE phrase. We no longer need *ad hoc* explanations of the sort that verbs that can occur in the RC must be "marked in the lexicon with the feature [± resultative]" (Aarts 1992: 64) or that a resultative sentence such as **Bill broke the vase worthless* is ungrammatical because *break* is a "nonrepeatable point-event verb" that cannot have a result property (Jackendoff 1990a: 240). The sentence is unacceptable because

[119] That verbs select for certain aspects of their objects, creating "'sense in context' phenomena" is also stressed by Pustejovsky within his framework of qualia structure (1995: 86-92). In the sentences *Mary painted the door* and *Mary walked through the door*, the verbs *paint* and *walk* activate different aspects of the qualia structure of *the door* (Pustejovsky 1995: 91). The same effect can be illustrated with the sentences "*The newspapers attacked the President for raising taxes*" and "*Mary spilled coffee on the newspaper*" (Pustejovsky 1995: 91-2).

break directs its force onto the material-integrity dimension of physical objects (cf. *Bill broke the vase to pieces*), and not on its value-dimension.

The dimensional (and directional) constraint is not the whole story, however, because it does not rule out the following dubious or unacceptable sentences:

(194) a. *John shot the tiger wounded. (ROS: 100)
b. ??John wiped the table a little bit clean. (ROS: 53)
c. *How wet did the gardener sprinkle the tulips? (ROS: 73)

The result property must express the upper or lower bound of the dimensional scale the VERB's energy has applied to, so the adjectives in the RESULT-slot do not normally refer to a medial position on the scale (194a), and are not typically graded or modified by an intensifier (194b) (Goldberg 1995: 195-6; Goldberg and Jackendoff, to appear); by the same token, the degree of the result property is not usually asked for by *how* (194c). The RESULTATIVE Construction thus codes a force-dynamic event in which energy is transmitted onto some dimension of an entity until the end of the dimensional scale has been reached. While the force recipient provides the scale along which the force-dynamic event is measured out, the RESULTATIVE phrase marks the endpoint on that scale. This end-of-scale constraint seems to be arbitrary at first sight, yet it is clearly motivated by the respective conceptualisations underlying ACTIVITY and RESULTATIVE Constructions. The activity sentence *Mary was wiping the table* implies that the table got cleaner in the course of the event, but the focus is on the manner of activity and not on any result state. The resultative sentence *Mary wiped the table clean*, on the other hand, profiles both the manner of the activity and its result. Since resultative sentences have an accomplishment-reading because they imply that the activity stops once a result has been reached, the result property must code a canonical or prototypical end-state as otherwise the activity would not normally have stopped. Conceptualisations of events are ICMs, and constructions first and foremost reflect such idealised models in linguistic form. Less typical end-states are not coded by one specialised construction-type but usually require a combination of two clauses: *John shot at the tiger, and it was wounded as a result*.

There is another restriction that has proved difficult to handle for discrete frameworks. The RESULTATIVE-phrase cannot be filled by either present or past participles (195) (Goldberg 1995: 197; Green 1972: 89).

(195) a. *Mary pushed the door opening. (ROS: 82)
a'. *Mary scrubbed the pots shining. (ROS: 83)
b. *Mary pushed the door opened. (ROS: 100)
b'. *Mary scrubbed the pots polished. (ROS: 100)

Green says that she "cannot imagine the reason for this constraint ... except that it is so regular that surely it follows from something" (1972: 89), and Randall claims that these constraints

"must be idiosyncratically interpreted" (1983: 89); similarly, Carrier and Randall see them as another illustration of the fact that the resultative phrases must be semantically selected by their respective verbs (1992: 184). A look at the RESULTATIVE Construction as a whole permits a revealing account of these restrictions, however. The RESULTATIVE phrase must denote an end-state, and states cannot be expressed by present participles. A present participle describes an event that is gradually developing and is therefore not compatible with the semantics of the RESULTATIVE-phrase. If (195a) is divided up into a sequence of two events, a present participle becomes possible: *Mary pushed* (*on*) *the door, which was opening then*. It is trickier to explain why past participles are barred from the RESULTATIVE Construction because past participles do code result states. Yet when we look more closely at the semantics typically associated with past participles, we see that their use in the RESULTATIVE Construction would yield an aspectual clash. A sentence such as *The window was opened* "expresses a state implying a previous event (action or process) it has resulted from" (Nedjalkov 2001: 928). *The window was open*, on the other hand, "express[es] a state of an entity without implying a previous event" (Nedjalkov 2001: 928). The past participle *opened* thus indicates a state that is the result of the activity denoted by the verb stem; the sentence *The window was opened* implies that *the window* has been a participant of an opening-event at some time in the past. Since the past participle inherently contains resultative semantics, (195b, b') would mean that the door was opened as a result of an opening-event and the pot was polished as a result of a polishing-event. The RESULTATIVE Construction, however, conveys the sense that the end-states expressed by the RESULT phrases follow from the force transmitted by the matrix verbs *push* and *scrub*, respectively, so the use of past participles in the RESULT-slot is actually redundant.

While some property dimensions allow various settings, others only tolerate one specific instantiation. Although a ball must be round to be identified as a ball, a sentence such as (196a) is nevertheless possible because our conceptualisations of reality need not be identical with physical reality. The NP *the ball* can still be used as a reference point for the new property because it served as the endpoint of the activity that created the new state in the first place. In many comparable cases, the RESULT-phrase is not realised by an AP, but by the preposition *to* plus an NP which introduces a new term for the entity that has been changed in one of its constitutive properties. When a city is completely burned, ice is melted or coffee beans are ground fine, the city, the ice and the coffee beans lose their material integrity and cannot felicitously be referred to as *city*, *ice* or *coffee beans* any longer. The *to* NP-RESULT phrases are used to introduce new denotations for these entities after they have lost their

physical integrity (196b-d). While adjectives in the RESULT-slot typically denote properties of endpoints that have been changed along parameters with variable settings, NPs introduced by the preposition *to* refer to the new kind of entity that has been created by a force-dynamic event which has destroyed the previous endpoint.

(196) a. John pounded the ball flat.
b. The soldiers burned the city to cinders.
c. John melted the ice to a liquid.
d. John ground the coffee beans into a fine powder.

In addition to such verbs as *wipe* or *paint*, which activate one specific dimension of the force recipient, the RESULTATIVE Construction also tolerates verbs that express transmission of force, but do not specify onto which dimension of an entity this force is directed. When a 'default resultative verb' such as *make* is found in the VERB-slot, the RESULTATIVE property is much less restricted because it can refer to almost any property dimension of the OBJECT-entity:[120]

(197) a. Mary made the table stained. (ROS: 17)
b. Bill made the metal beautiful. (ROS: 23)
c. John made the wall blue. (ROS: 20)
d. John made Mary angry. (ROS: 0)

While the property *stained* refers to the instantiation of a defining property dimension of the entity *the table*, the properties *beautiful*, *sticky* and *angry* highlight optional properties of the entities *the metal*, *the door* and *Mary*, respectively. The force-transmission event changing the colour dimension of an object such as *the door* is lexicalised by *paint* because this change of state can apply to a large number of different entities that all display the defining property dimension 'colour'. The reason why there are no lexical verbs in the English language that code transmission of force onto the 'stickiness' or 'beauty'-dimensions of material objects is that such changes do not occur regularly and therefore do not lend themselves to a systematic conceptualisation; in other words, there does not seem to be a motivation for lexicalising verbs expressing these specific changes. If such changes are to be described linguistically, a default resultative verb such as *make* can be used, which denotes transmission of force in an underspecified way.[121] Such verbs also come in handy when the exact manner of the force-transmission event is not significant; a sentence such as *They made Mary director* leaves open

[120] Jackendoff (p.c.) treats these verbs as 'verbal resultatives' that have the same argument structure and meaning as the RESULTATIVE Construction; to him, the RC is an abstraction from these verbal resultatives. Goldberg (p.c.) shares my view that verbs such as *make* are just very general instantiations of the verbal slot. She has been able to show that semantically light verbs such as *make*, *go*, *do*, *put* and *give* play a key role in children's learning the meaning of constructions (Goldberg, Casenhiser and Sethuraman, to appear).

[121] Some generative grammarians have concluded from this that there is no semantic relationship between a verb such as *make* and its postverbal NP and that this NP cannot therefore be its direct object (Aarts 1995: 76; Carrier and Randall 1993: 133-4; Wilder 1994: 222). This conclusion is unwarranted, however, because there clearly is a force-dynamic relationship between *make* and the postverbal entity.

the exact way in which the function of the human entity *Mary* has been changed (by appointing, electing, etc.).

While *make* is the most frequent default resultative verb, it is not the only one in English. *Render* similarly expresses an underspecified kind of force; in contrast to *make*, however, it typically has a directional component favouring negative results (198a). Other default resultative verbs such as *drive* are restricted to specific collocations, in this case "negative and extreme mental states" (Goldberg and Jackendoff, to appear) (198b).

(198) a. It rendered them speechless/impotent/??alive/??free. (from Goldberg 1995:196)
b. John drove Mary crazy/bananas/*happy/*sick. (from Goldberg and Jackendoff, to appear)

The characterisation of *make* and *render* as default resultative verbs also helps to clear up a difficulty that has long plagued discrete treatments of these verbs. While resultative phrases are usually omissible (*John painted the door*), they are obligatory when they follow *make* (in the sense of change, not that of creation) and *render*: !*John made the door*; **John rendered Mary*. Discrete grammars handle this divergent behaviour by claiming that *paint* and *render* must have radically different subcategorisation frames, with the former subcategorising for a direct object NP and the latter for an SC (Aarts 1995: 76). The constructional account offers up a new way of approaching these differences. While sentence (199a) highlights the result of force transmission from *John* towards *the door*, (199a') profiles the manner of force transmission. Since *render* does not lexicalise a manner component, it is only possible in the RESULTATIVE Construction (199b), but not in a construction that focuses on the manner of an activity (199b'). This distribution touches on the more general principle that a sentence must be sufficiently meaningful to be acceptable. As Goldberg and Ackerman have recently shown, some passive sentences need an "obligatory adjunct" to make them informationally satisfying (199c, c'); similar remarks hold for constructions with cognate objects, which are only felicitous when the cognate object is modified somehow (199d, d') (2001: 799).

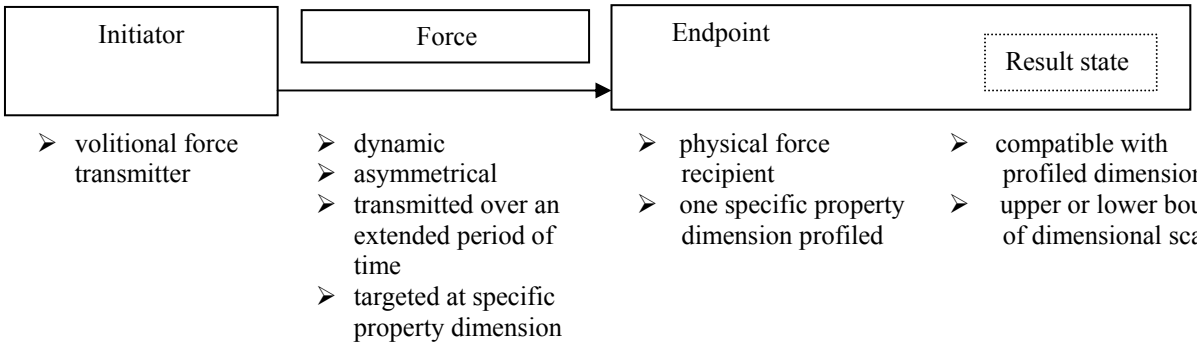
(199) a. John painted the door red.
a'. John painted the door.
b. John rendered Mary sad.
b'. *John rendered Mary.
c. This house was built in the last century.
c'. ?This house was built.
d. John laughed a hearty laugh.
d'. ?John laughed a laugh.

Phrases such as *in the last century* and *hearty* straddle the argument-adjunct distinction because they are semantically adjunct-like, but obligatory in (199c, d). What forces their appearance in these instances is that the respective sentences would not otherwise be informative: "It is not normally necessary to utter sentences without a focus, since all information

would be redundant or recoverable; thus such sentences are typically infelicitous" (Goldberg and Ackerman 2001: 806). By the same token, a RESULTATIVE phrase can only be 'omitted' if the corresponding ACTIVITY Construction is informative in its own right; this is the case with (199a'), but not with (199b'), which has no manner-of-activity component that could be profiled in the absence of a resultative meaning.

The restrictions on the elements of resultative sentences have hitherto been discussed in relative isolation from each other instead of receiving an integrated viewing. The force-dynamic model behind the RESULTATIVE Construction brings out the interconnectedness of the various restrictions and thus minimises crucial reliance on idiosyncratic constraints:

Figure 5: Force-dynamic explanation of the constraints on the slots of the RESULTATIVE Construction



I will conclude the discussion of the RC with a brief foray beyond prototypical instances. Since non-discrete grammar treats constructions as complex lexical items, constructions are expected to be radial/polysemous categories like words. In addition to the prototypical force-dynamic event in which a volitional entity acts on a physical object and changes one of its properties as a result, there are also less typical force-dynamic events that can be accounted for with respect to the prototype.

One extension from the prototypical core codes acts of social force-transmission between human beings. The force that is transmitted from the initiator can be regarded as a more abstract social force in such instances; to effect the asymmetry inherent in force dynamics, the initiator must be an authority that conventionally has control over the change of state he or she imposes on the force recipient. We can profitably consider two specific verbs that are compatible with the idea of social force-transmission, *declare* and *appoint*, in some detail. In constructions including the performative verb *declare*, the initiator must be an authority whose utterance can cause a change of state in the endpoint (cf. Searle's discussion of illocutionary speech acts (1979: 19-20)). As Borkin has shown, sentences with performative verbs become odd when the SUBJECT-slot is not filled by an authority:

(200) a. The judge declared Mary Stultz insane.
b. ?Mrs Grass declared Mary Stultz insane. (from Borkin 1984: 81)

RESULTATIVE Constructions including *declare* are typically found in a number of clearly defined semantic contexts. Of the 170 instances of this construction that I extracted from the BNC, 47 (28%) belong to a political or administrative context, in which an executive authority changes the state of another entity (201a, a'); 42 examples (25%) come from the legal area, in which a court changes another entity by virtue of its juridical powers (201b, b'); another 11 sentences stem from medical contexts, where a doctor decides on the physical or mental state of a patient (201c). In addition, 6 sentences are from the world of sports (201d), another 6 from religious contexts (201e), and 10 from the context of meetings and sessions (201f).

(201) a. 1360 The Ottilia of Talabecland declares herself Empress (BNC CN1: 190).
a'. The rally, which the government had declared illegal, was nonetheless attended by some 6,000 at a stadium in Nairobi (BNC HKW: 265).
b. Until the seventeenth century the courts would declare Acts of Parliament void if they considered them contrary to natural law (BNC EVK: 187).
b'. Refusing to accept defeat when his early pamphlets were legally declared immoral in 1909, he continued his writing (BNC BN1: 5).
c. Unlike some countries, where a person may be declared clinically dead when the brain stops functioning, Indian doctors are only allowed to certify death when the heart has stopped beating (BNC HH3: 13940).
d. "At least the race was completed and did not have to be declared void," Arkwright added (BNC CBG: 7762).
e. At the Fifth Ecumenical Council in 553, Theodore and all his works were officially anathematised and declared heretical (EDY: 2011).
f. I declare this meeting closed! (FR1: 1922).

An NP XP-structure is not a typical complementation for speech-act verbs, but when the sentences above are analysed as instances of the RESULTATIVE Construction, this structural pattern can be accounted for. *Declare* is also associated with SPEECH-ACT Constructions — this is, in fact, the more prototypical association because my corpus findings include only 170 instances with *declare* in the RESULTATIVE Construction, as compared to 410 sentences in which this verb is used in a SPEECH-ACT Construction:

(202) Soon she declared that the sauna was suffocating; after repeating oncemore [sic!] how she hated modesty, she got up and left (ABS: 1719).

When we compare minimal pairs in which *declare* is followed by an NP XP-string and a *that*-clause, respectively, the differences between the resultative and speech-act semantics become obvious (203). Discrete accounts would have to argue that these sentences contain different sememes of the verb *declare*, while a Construction-grammar framework can ascribe these differences directly to the respective constructions.

(203) a. The doctor declared that John was dead.
a'. The doctor declared John dead. (from Green 1970: 276)
b. Sam declared that Mary was insane.
b'. Sam declared Mary insane. (Borkin 1984: 57)

When human beings instead of physical entities form the force-recipient, they are frequently not changed in a property, but in one of the functions that are conventionally associated with

them. In addition to property-dimensions, the mental construct of a human being crucially contains the social functions he or she performs as well (as brother, professor, tax payer, etc.). In a resultative event in which the VERB-slot is filled by *appoint*, the initiator must be an authority that can assign a new function to the endpoint (204a, b). According to a BNC search, the new function is introduced by *as* in about a third of all instances (204c, d). *As* NPs cannot be used in the RESULTATIVE-slot to denote a property, but the "unity-fractioning" semantics of *as* (Schneider 1997: 38) makes it a good device to highlight one of the functions of a human being.[122]

(204) a. If the candidate obtains an absolute majority, he is appointed Chancellor by the Federal President (BNC FA7: 1430).
b. In 1552 Sir William Parr ... appointed him his provost marshal in Surrey (BNC GT5: 274).
c. You have recently been appointed as a salesperson for the industrial division and have been asked to visit a new potential client (BNC K94: 321).
d. After the great fire, he was appointed as one of the supervisors of the rebuilding of the City (BNC GT4: 760).

Although plain NPs and *as* NPs are often interchangeable, my corpus data reveal a slight tendency for plain NPs to be used when a person is assigned a unique function (cf. 204a); *as* NPs, on the other hand, are more frequent when a person is appointed to a kind of post that many other people occupy as well (cf. 204c).

Still further removed from the prototypical core of the RC are what I call 'prospective' resultatives. The VERB-slot of this more peripheral RC is filled by verbs such as *want*, *order* and *expect*, which transmit a mental or volitional force on the OBJECT-entities:

(205) a. They want a memorial erected on the site in honour of the pilot (BNC K1V: 860).
a'. Our King always wanted Buckingham dead (BNC H90: 1766).
b. Even Fouché doesn't order people killed just for the hell of it (BNC B20: 89).
b'. He ordered the entire city rased (BNC CM1: 1056).
c. I'll expect you at the Presbytery in a few days with your donation (BNC CR6: 2816).

There are a number of differences between the prospective RC and sentences such as *John wants Mary to visit him*: in the prospective resultative, the subject is interpreted as having more control over the future situation and as anticipating a closer, sometimes even physical experience with the object; in addition, the time-span between the wish or order and its ex-

[122] Human beings are more interested in the results of events than in their beginning. This is the reason why there is no INCEPTIVE Construction comparable to the RESULTATIVE Construction (Rothstein 2000: 255). Seppänen has been able to show, however, that social resultatives profiling the functions of persons are exceptional in this respect; in addition to the social RC (*They appointed John chairman*), there is a construction that highlights the loss of a function: *They dismissed John as chairman*; *They fired him as sales manager* (1998: 468). Seppänen calls the *as*-phrases in this construction 'discontinued attributes' because they "denote[.] a position or function which the person in question loses as part of the event depicted" (1998: 468). This pattern is rather new and seems to have derived from sentences such as *They dismissed John from his function as chairman* (Seppänen 1998: 475, footnote 2); it obviously fills the need to have a linguistic construction corresponding to an event where an authority acts on a person in order to deprive that person of a function.

pected accomplishment is telescoped into a rather short period of time (Borkin 1973: 52-3). All of these characteristics can be claimed to stem from the force-dynamic semantics of the prototypical RC. A significant indication that we are dealing with a more marginal instance of the RC is that the RESULT-phrase is usually realised by a past participle in prospective resultatives, something that is not possible in ordinary resultative sentences. The past participle fulfils an important semantic function here: while the verb only denotes the mental force that is directed to some unnamed intermediate agent(s) that will initiate the event, the verb stem of the past participle expresses the actual physical force that will have to be transmitted to the OBJECT-entity so that the result state (coded by the past-participle form) can be achieved.

To conclude, constructions are like words in having a prototypical semantic core with radial extensions. Another similarity to words is that the exact meaning of a construction, or rather the conceptualisation behind it, can only be understood if its place within the network of functionally related constructions is mapped out, a task that will be undertaken in the following sections.

9.3 Mapping out the functional space of resultative and related constructions

In the typical RESULTATIVE Construction, which I will call TRANSITIVE RESULTATIVE Construction (TRC) to distinguish it from other resultative patterns, the SUBJECT codes the initiator, who volitionally directs his or her force onto a specific dimension of the OBJECT-entity, thereby changing a property of that dimension. Aside from the central TRC, there are a number of subsidiary resultative constructions and several other force-dynamic constructions whose conceptualisations can be compared to that of the TRC on three functional maps. The first functional map (9.3.1) comprises four resultative constructions that differ with respect to the relative prominence accorded to the initiator or the endpoint, and with respect to the intentionality of the force transmission; the second functional map (9.3.2) includes force-dynamic constructions that code events in which the energy transmitted from the initiator does not change the endpoint in one of its properties, but in its location in space. The third functional map (9.3.3) cuts across the other two and distinguishes force-dynamic constructions on the basis of the relative prominence accorded to the manner of force transmission and the result of force transmission, respectively.

9.3.1 Functional map I: relative prominence of initiator and endpoint

9.3.1.1 The Passive Resultative Construction

The first functionally related resultative construction can be dealt with fairly briefly because its main characteristics are familiar from traditional grammar. While (206a) shows the align-

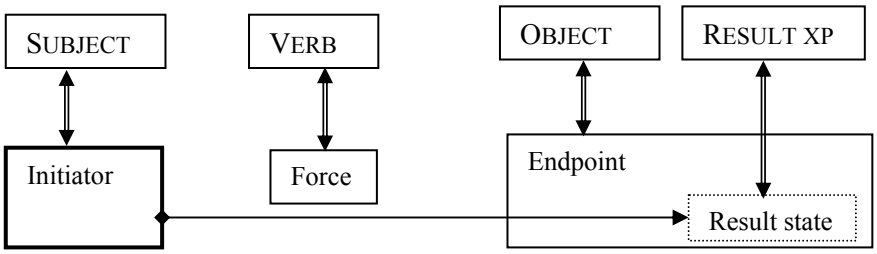
ment of the four constructional slots in the TRC, (206b) illustrates the order of these slots in the PASSIVE RESULTATIVE Construction (PRC).[123]

(206) a. **[**[Mary] [wiped] [the table] [clean]**]**.
b. **[**[The table] [was wiped] [clean] ([by Mary])**]**.

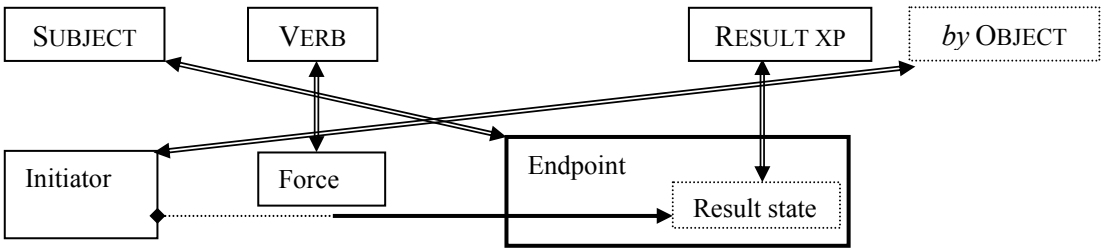
In an ordinary force-dynamic event (206a), the relation between the initiator and the endpoint is built up with reference to the initiator because the initial focus is on the volitional entity transmitting energy, and when the focus is shifted towards the endpoint, the initiator still serves as the anchoring point of the relationship. The reason for the unmarked status of the TRC vis-à-vis the PRC seems to be the fact that the former iconically reflects our conceptualisation of force-dynamic events, with energy flowing from a volitional source to a physical endpoint, whereas the latter violates this causal order. Langacker interprets the active/passive relation as a "case of figure-ground reversal" (1999b: 47). The major functional motivation behind the PRC is that it does not put the initiator, but the endpoint in the first constructional role: the initial focus of the PRC is consequently on the entity undergoing the change, and the force transmitter, who is conceptualised with reference to the endpoint, is relegated to an optional fourth constructional slot at the end of the construction. The PRC thus reflects an event-conceptualisation in which the initiator and the force it transmits are backgrounded, and the endpoint and its resultant state are profiled (figure 6) (cf. also Croft 1991: 248-9).

Figure 6: Force-dynamic conceptualisation of the TRANSITIVE RC and the PASSIVE RC

TRANSITIVE RC:



PASSIVE RC:



[123] There is no pat answer to the question whether the PRC is a primitive construction or is, as Goldberg and Jackendoff (to appear) suggest, "formed by composing the passive ... constructions with resultative constructions" because a decision depends on the degree of mental entrenchment of the construction. A deeply entrenched construction could well be used as an automatic routine and need not be viewed as being composed from two more primitive constructions every time it is used.

This figure/ground reversal is linguistically effected by linear order and other grammatical devices: the endpoint occupies the prominent first slot in the construction, while the initiator is demoted to an optional final slot and is realised not by a plain NP, but a *by*-phrase. Since it is not the flow of energy from initiator to endpoint that is foregrounded, but the impact the energy has on the endpoint, the VERB-slot does not include an active, but a passive verb form, which is structurally similar to copula predications in categorical judgements, which also focus on one entity, and not on the relation between two entities (cf. *The table was wiped clean* and *The table was clean*).

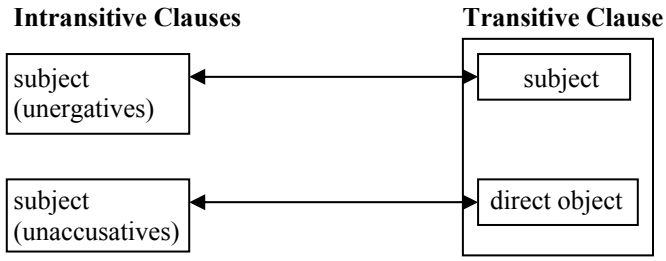
9.3.1.2 The Autonomous Resultative Construction

The result property is invariably predicated of the OBJECT-entity in the TRC, and not of the SUBJECT-entity. As has been noted above, some discrete grammars invoke the Direct Object Restriction to account for these constraints, while the non-discrete approach adopted here points to the asymmetric force-dynamic relations coded by the resultative construction. There is, however, a pattern which does not contain an OBJECT-slot and in which the result property is predicated of the SUBJECT-entity (207). These sentences call for an explanation in discrete and non-discrete accounts alike because the RESULTATIVE phrase cannot normally refer to the SUBJECT-entity in intransitive sentences (cf. **John ran to exhaustion* or **John shouted hoarse*).

(207) a. The ice-cream froze *solid*.
b. The vase broke *to pieces*.
c. The butter melted *to a liquid*.
d. Mary blushed *red*.
e. The door slammed *shut*.
f. The animal bled *to death*.

Discrete grammars point to the fact that it is not only with respect to the tolerance of resultative phrases that intransitive patterns do not form a unified class; there is, in fact, a whole bundle of semantic and syntactic properties that seems to indicate that intransitive clauses fall into at least two distinct categories, a phenomenon that has come to be known under the label 'split intransitivity'. The fact that the subjects of some intransitive patterns share a number of characteristics with the subjects of transitive clauses, while other intransitive subjects are more similar to direct objects (Levin and Rappaport-Hovav 1992: 247), prompted the idea that the subject of so-called 'unergative' intransitive verbs can be likened to the subject of transitive verbs, while the subject of 'unaccusative' intransitive verbs may be equated with the direct object of transitive verbs (figure 7).

Figure 7: Split intransitivity



A series of tests is frequently adduced to show that the subjects of unaccusative verbs do indeed behave similarly to the objects of transitive verbs, and not to the subjects of unergative and transitive verbs. To begin with, the past participle of unaccusative verbs can be used to premodify the subject of the clause in the same way that the past participle of transitive verbs can modify the direct object (208a). The past participle of unergative verbs cannot modify the subject, however, and the past participle of transitive verbs cannot refer to the subject either (208a') (Hoekstra 1988: 112; Kaufmann 1995: 402). Moreover, unergative and transitive verbs can be transformed into agentive *–er*-nominalisations, which have the same reference as the subject of the respective unergative or transitive clause (208b). Such nominalisations are not felicitous for unaccusative verbs, and they cannot have the same reference as the object of transitive verbs either (208b') (Kaufmann 1995: 397). Finally, the fact that resultative XPs can refer to the subject of unaccusative and the direct object of transitive clauses, while the subjects of unergative and transitive sentences do not tolerate them (208c, c'), is also frequently taken as a diagnostic of split intransitivity (Bresnan 2001: 313; Levin and Rappaport-Hovav 1992: 255).

(208) a. frozen ice-cream (The ice-cream froze.); a wiped table (The waitress wiped a table.)
a'. *a worked man (The man worked.); *a wiped waitress (The waitress wiped a table.)
b. a worker (The man worked.); a killer (Bob killed John.)
b'. !a freezer (The ice-cream froze.); !a killer (Bob killed John.)
c. The ice-cream froze *solid*.; The waitress wiped the table *clean*.
c'. *John worked *to exhaustion*. *The waitress wiped the tables *to exhaustion*.

Since discrete grammars work with cross-constructional syntactic primitives, they argue that the above tests identify the subject of unaccusative verbs as a direct object underlyingly, which has only been moved to the subject-position at S-structure, while the subject of unergative verbs, like the subject of transitive verbs, is a subject both underlyingly and at surface (Levin and Rappaport-Hovav 1992: 247). The movement operation sketched in (209) is motivated analogously to passive clauses: the sole argument of *freeze* is claimed to be base-generated in the direct-object position; unlike active transitive verbs, but similar to passive transitive verbs, an unaccusative verb is not thought to be a Case-assigner. Hence, the NP in

the object-position must move to the empty subject-slot, where it can be assigned nominative Case (Grewendorf 2002: 64; Haegeman and Guéron 1999: 242-3; Hoekstra 1988: 112; Staudinger 1997: 80).

(209) D-structure: ∅ *froze the ice-cream solid.* ⇒ S-structure: *The ice-cream*$_i$ *froze* t_i *solid.*

When the subject of unaccusative verbs is considered a direct object underlyingly, the DOR can be upheld; all that is necessary is that this restriction is "formulated in terms of underlying rather than surface objects" (Rappaport-Hovav and Levin 2001: 768). The application of the DOR to underlying objects has the additional advantage that it affords a unified account of resultative phrases in unaccusative (*The pond*$_i$ *froze solid* t_i) and passive sentences (*The table*$_i$ *was wiped* t_i *clean*): the surface subjects of both passives and unaccusatives are D-structure objects and therefore tolerate resultative XPs (Aarts 1995: 84; Rappaport-Hovav and Levin 2001: 768). At the same time, the DOR rules out resultative phrases related to underlying subjects in transitive (**Mary wiped the tables to exhaustion*) and unergative patterns (**Mary sang hoarse*) (Aarts 1995: 85).

From a non-discrete stance, the identification of some intransitive subjects as underlying direct objects is opportunistic for two reasons. Firstly, because it must rely on different levels of structural representation, and secondly, because it presupposes that the unaccusative/unergative criteria clearly distinguish two sets of intransitive verbs. This assumption begins to encounter problems when we look at the putative criterial tests more closely, however. NPs premodified by past participles, *-er*-nominalisations and intransitive resultative constructions are motivated by their own idiosyncratic semantic characteristics and do not converge to single out two discrete classes of intransitive verbs. Without going into particulars, I will show that there are a number of distributional mismatches that cast doubt on the attempt to define a verb as unaccusative or unergative independently of the specific construction it is found in.

A past participle expresses the state that has resulted from the event denoted by the base verb. It can only be used prenominally if it is possible to conceive of the preceding event as having a salient result state that can serve to characterise the noun. The event described by *freeze*, for instance, has a visible result state that can be used to characterise the noun *pond* (*a frozen pond*). Activities such as *run* or *laugh*, on the other hand, do not imply result states, and it is therefore odd to characterise NPs with the past participles of these verbs (**a run man*; **a laughed child*) (Kaufmann 1995: 402). The "typical perfect participle that can be used attributively is one that leaves a mark on something" (Bolinger 1967b: 9), and it is difficult to think of the mark that activities like running or laughing leave on the entities that perform

them. Not all verbs that are usually identified as unergatives are barred from the formation of prenominal past participles, though. When the activity denoted by the putative unergative verb is more closely specified, it can function as a prenominal past participle characterising its head NP (e.g. *a run-away child*). Similarly, not all past participles of transitive verbs make good nominal premodifiers: **a scratched head* is odd because the activity of scratching one's head does not leave a mark that could be used to characterise the head (Bolinger 1967b: 9).

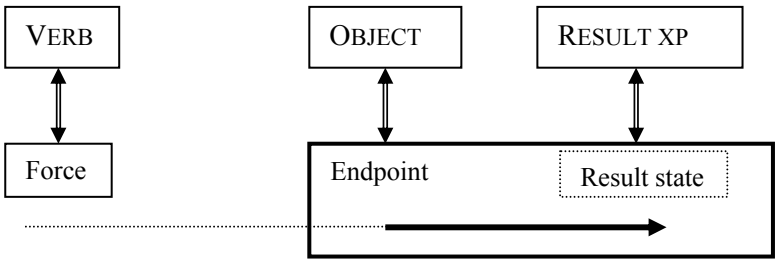
The nominalisation test is also subject to distributional mismatches. A prerequisite to the formation of *–er*-nominalisations is that the referents of these nominals perform the described activities habitually or professionally and may therefore be identified by their activities (*a runner*; *a baker*) (Kaufmann 1995: 399). Putative unaccusative verbs do not allow *–er*-nominalisations because it would be unusual to characterise individuals by the change of state they undergo; ice that melts will therefore not be described as **melter*, but as *melting ice* (Kaufmann 1995: 400). However, not all verbs that are usually classified as unergatives can undergo *–er*-nominalisations. Activities that are not normally performed habitually do not form felicitous nominals: **laugher* and **clapper* are ruled out because it is difficult to conceive of people who could be identified by their habitual participation in laughing or clapping-events (Kaufmann 1995: 398).

In short, verbs should not be inherently categorised as unaccusative or unergative on the basis of a battery of syntactic tests. What is vital is a characterisation of the cluster of distinctive semantic properties that is associated with such constructions as premodified NPs and *–er*-nominalisations; in the same vein, what I will call the AUTONOMOUS RESULTATIVE Construction (ARC) should not be used as a criterial test for the identification of a putatively discrete class of unaccusative verbs, but be characterised in its own semantic terms in order to understand why the result state can exceptionally refer to the SUBJECT-entity in this construction.

The ARC (e.g. *The vase broke to pieces*) profiles the state of the endpoint that results from the force it receives. In contrast to the PRC, the initiator is not merely backgrounded, but completely left out of the conceptualisation (figure 8).[124]

[124] As in the PRC (*The vase was broken to pieces*), the force that leads to the result state is backgrounded in the ARC (*The vase broke to pieces*). If the force is to be left completely out of the conceptualisation, a premodified NP such as *the broken vase* must be used, which only focuses on the result state (cf. Croft 1991: 170).

Figure 8: Force-dynamic conceptualisation of the AUTONOMOUS RESULTATIVE Construction



The ARC thus presents an event as happening to the endpoint autonomously, i.e. without being caused by a force transmitter. This construction is a decausativising device that indicates that something happens of its own accord, without someone being responsible for it. An initiator may be inferred, but is not part of the conceptualisation of the ARC *per se*. Linguistic constructions can impose a perspective on an event that is in marked contrast to the occurrences in the world, where "everything is an unbroken causal continuum" (Talmy 1988: 93). Autonomous events are therefore not a scientific, but a linguistic and conceptual notion (Talmy 1976: 47-8).[125]

We can account for the fact that resultative phrases refer to the SUBJECTs of some intransitive patterns, but not to those of others, by assuming different pairings of the force-dynamic roles with the SUBJECT-slot. In the two-participant TRC (210a), the SUBJECT codes the initiator and the OBJECT the endpoint of a force-dynamic event. In the one-participant INTRANSITIVE ACTIVITY Construction (210b), the SUBJECT-slot likewise hosts the initiator, but the energy flowing from it is not directed towards another participant, so there is no endpoint in this construction. The AUTONOMOUS RESULTATIVE Construction (210c) shares characteristics with both of these constructions: like the INTRANSITIVE ACTIVITY Construction it only has one participant coded as the SUBJECT. This single participant does not have an initiator role, however, but has the semantics of an endpoint like the OBJECT-entity in the TRC. The comparison of these three constructions thus clearly illustrates why 'subject' is not a cross-constructional primitive, but must be defined with respect to particular constructions: while it codes the force transmitter in (210a) and (210b), it codes the force-recipient in (210c). Since a force-dynamic event profiles the result state of the endpoint, a result XP can refer to the SUBJECT only in the ARC.

(210) a. TRANSITIVE RESULTATIVE Construction: *The waitress wiped the table clean.*
[SUBJECT/Initiator] [VERB] [OBJECT/Endpoint]
b. INTRANSITIVE ACTIVITY Construction: *John laughed.*
[SUBJECT/Initiator] [VERB]

[125] The ARC is not the only linguistic construction that depicts events as happening autonomously. The MIDDLE Construction likewise codes an event in which something happens to an entity in the absence of an explicitly mentioned initiator: *The book sells well*; *This sort of orange peels well.*

c. AUTONOMOUS RESULTATIVE Construction: *The vase broke to pieces*.
[SUBJECT/Endpoint] [VERB]

The process denoted by a verb that can potentially be associated with the ARC must be conceivable as something that does not require a volitional initiator. Activities such as *run*, *shout*, *laugh* or *work* cannot be conceived of as happening autonomously, but must necessarily be conceptualised with respect to an initiator (211a); as a consequence, typical activity verbs are not found in the ARC (211a'). The events expressed by verbs such as *blush* or *freeze*, on the other hand, are more felicitous with the autonomous interpretation coded by the ARC (211b) than with the TRC, which also foregrounds an initiator (211b'). In addition, there are some verbs that lie midway between *run* and *blush* because they denote events that may be conceptualised as having a force-transmitter (211c) or as happening by themselves (211c').

(211) a. John was running/ laughing/ shouting/ working etc.
a'. *John laughed *silly*./ *John shouted *hoarse*.
b. John blushed *red*./ The river froze *solid*.
b'. *John's blood blushed him *red*./ ?Cold temperatures froze the river *solid*.
c. John slid the door *open*./ John broke the vase *to pieces*.
c'. The door slid *open*./ The vase broke *to pieces*.

The conventional wisdom on pairs such as those in (211c, c'), sometimes known as examples of the "causative/ inchoative alternation" (Levin and Rappaport-Hovav 1992: 262-3), has it that the respective verbs possess both an intransitive and a transitive sememe. From a Construction-grammar perspective, the difference does not lie in the verb, but in the two different constructions it can be associated with. Whether the event denoted by a verb is open to alternative conceptualisations as initiated by a force transmitter or as happening autonomously depends on the way the event is conceived of by a linguistic community.

9.3.1.3 The Excessive Resultative Construction

As it stands, the generalisation that sentences including typical activity verbs such as *shout* or *dance* do not tolerate resultative phrases is not quite correct. (212) shows that resultative XPs are compatible with activity verbs, but only if the sentence also contains a reflexive pronoun in the postverbal position.

(212) a. John shouted himself hoarse.
b. Mary danced herself tired.
c. Bob worried himself sick.
d. Mary cried herself to sleep.
e. The Alberta liquor laws laid down that no minors might drink, but it was not difficult to obtain beer or liquor, and he had often drunk himself silly (BNC CDN: 1461).
f. If the Smiths had only produced sunny, cuddly stuff like 'Heaven knows'..., they would have merely presaged the perky negligibility of The Housemartins, the sound that grins itself to death (BNC AB3: 209).

Rappaport-Hovav and Levin call this the "reflexive intransitive-based pattern" and speculate that a sentence such as *John shouted himself hoarse* is acceptable because it satisfies the

DOR, in contradistinction to **John shouted hoarse* (2001: 767). In the examples above, the resultative XP can be argued to be predicated of the intransitive subject indirectly, mediated by a reflexive pronoun as direct object (Staudinger 1997: 79-80). Following Simpson, these reflexives are commonly called "fake reflexives" (1983: 145) because they are not thought to be semantically selected by the main verbs, but to be added to the structure solely "to fulfill the syntactic need for the resultative phrase to be predicated of an object" (Levin and Rappaport-Hovav 1992: 255).

The syntactic explanation given for (212) is also applied to sentences such as those in (213), which contain transitive verbs that are not followed by their usual direct objects, but by 'fake reflexives' like the intransitive verbs above (Rappaport-Hovav and Levin 2001: 794). The resultative phrases may again be argued to be predicated of the subject-entities via the reflexive pronouns.

(213) a. John ate himself sick.
b. Mary drank herself senseless.

In addition to the reflexive patterns, there is what Rappaport-Hovav and Levin call the "non-subcategorized NP intransitive-based pattern" illustrated by (214), in which the DOR seems to be satisfied by the inclusion of a putatively non-thematic direct object (2001: 769). The direct objects *John*, *their Nikes* and *his handkerchief* are considered to be subcategorised, but not theta-marked by their respective intransitive matrix verbs (Staudinger 1997: 173).[126]

(214) a. The dog barked John awake.
b. The joggers ran their Nikes threadbare. (from Carrier and Randall 1992: 173)
c. He sneezed his handkerchief completely soggy. (from Carrier and Randall 1992: 173)

The syntactic account of these unusual resultative patterns is informed by the idea that the reflexives in (212) and (213), as well as the postverbal NPs in (214), are athematic elements that are added to the structure in order to satisfy the DOR or some other syntactic or semantic principle (Simpson 1983: 146; Rothstein 2000: 242). Discrete grammars do not have much choice but to treat the postverbal phrases as athematic: if verbs such as *dance*, *shout* or *bark* are considered to be inherently intransitive, they cannot have a thematic direct object in some instances, otherwise the building block 'intransitive verb' would lose its *raison d'être* (cf. Rivière 1982: 686). Similarly, if a verb is transitive, its direct-object argument is semantically specified in the lexicon. *Eat* and *drink* select edible and drinkable object arguments, respectively, so a reflexive direct object violates these selectional restrictions (Rivière 1982: 686).

[126] The pattern in (214) is not accepted by everyone, but represents the judgement of "a fairly tolerant speaker" (Randall 1981: 101, footnote 3). The ROS values are 37 for (214a) and 10 for (214b). (214c) is only accepted by a small minority of speakers (ROS: 83).

Carrier and Randall advance three tests that they claim are sensitive to the distinction between thematic and non-thematic direct objects (1992: 188-204). While transitive resultatives form acceptable middles (215a), intransitive resultatives do not undergo middle formation (215a'). In addition, transitive, but not intransitive resultatives allow Adjectival Passive Formation (215b, b'), and only transitive resultatives can undergo Nominal Formation (215c, c'). These tests seem to buttress up the claim that the postverbal NPs in (212-214) are athematic arguments of their respective verbs (see also Wilder 1994: 232-3).

(215) a. This metal hammers flat easily.
a'. *Competition Nikes run threadbare easily. (from Carrier and Randall 1992: 191)
b. the hammered-flat metal
b'. *the danced-thin soles. (from Carrier and Randall 1992: 195)
c. The hammering of the metal flat is a tiresome job.
c'. *The drinking of oneself sick is commonplace in one's freshman year.
(from Carrier and Randall 1992: 201)

If the thematic/nonthematic direct object distinction is feasible, resultative sentences would indeed be subject to the purely syntactic DOR. Note that the Affected Theme Restriction would not be able to explain the patterns in (212-4) because the direct objects are not thought to be thematic arguments of the main verbs, and the subjects are clearly AGENTS, not THEMES.

Rappaport-Hovav and Levin have recently distanced themselves from the DOR and suggested an event-based approach to account for fake reflexives and non-thematic NPs in resultative sentences. They propose that an intransitive resultative sentence describes a complex event that is made up of the subevent denoted by the verb and the subevent represented by the resultative phrase. Building on this assumption, they claim that each of the two subevents must be identified by an element in the syntactic structure of the sentence, in accordance with the "argument-per-subevent condition" (2001: 779). An intransitive resultative such as (216a) violates the argument-per-subevent condition because the subject *Mary* would be associated both with the matrix event and the resultative event. As a consequence, a direct-object NP must be inserted into the structure so that each subevent can be identified by its own argument in the syntax (216b, b') (2001: 780). The fake reflexive in (216b) guarantees that the two subevents share referentially identical participants, while the athematic NP in (216b') introduces a referentially distinct argument (2001: 780, 791).

(216) a. *Mary$_{1/2}$ sang$_1$ hoarse$_2$.
b. Mary$_1$ sang$_1$ herself$_2$ hoarse$_2$.
b'. The dog$_1$ barked$_1$ John$_2$ awake$_2$.

In corroboration of their claim that typical resultative sentences constitute complex events, Rappaport-Hovav and Levin argue that "the subevents need not be temporally coextensive, nor need they unfold at the same rate" (2001: 775). In other words, (216b) expresses an event

in which Mary sings, and an event in which Mary becomes hoarse, but the time course of Mary's becoming hoarse need not be dependent on Mary's singing, i.e. Mary need not become increasingly hoarser while she sings, but may only be hoarse at the end of the singing-event. Rappaport-Hovav and Levin contrast the event structure of such resultative sentences with that of what I have called the AUTONOMOUS RESULTATIVE Construction. They assert that the sentence *The door slid open* consists of two co-identified subevents because the door's sliding and the door's becoming open are temporally dependent, and therefore the single syntactic argument *the door* suffices for the co-identified 'slide-open' event (2001: 777).

Let me briefly take on Rappaport-Hovav and Levin's event-based approach. The argument-per-subevent condition which Rappaport-Hovav and Levin claim is operative in the mapping from event structure to syntax is not well-grounded. As Goldberg and Ackerman have been able to show, sentences with simple event structures such as ?*The claim was believed* or ?*The book was read* are infelicitous even though the verbs' events are sufficiently identified by the subject arguments, and it seems to be pragmatic rather than event-structure factors that are responsible for the acceptability of such sentences. It is therefore not clear that the unacceptability of (216a) must be attributed to the complexity of the underlying event rather than to other factors (2001: 802-3). In addition, the claim that the sentence in (216b) consists of two subevents ('Mary's singing caused her to become hoarse') requires some additional means to guarantee the semantic nexus between the subevents. In a force-dynamic account, the direct object is the endpoint of the matrix verb's event, and not just the argument of the result state. Finally, I doubt that sentences such as *The door slid open* and *Mary sang herself hoarse* can be distinguished by the notion of temporal (in)dependence: the door is open as a result of the sliding-event, and Mary is hoarse as a result of the singing-event; the result phrases contain adjectives expressing final states (cf. 9.2.3), and not events that are contemporaneous with the matrix event (cf. the ungrammaticality of **The door slid opening*). Resultative sentences thus always code single force-dynamic events, and the separation into two temporally independent subevents has an artificial flavour.

Both the DOR and the event-approach are purely formal accounts, and they both rely on the assumption that there is no semantic relation between the matrix verb and the postverbal NP. As with the putative distinction between unaccusative and unergative verbs, however, there are a large number of distributional mismatches that constitute counter-evidence to Carrier and Randall's claim that their tests (cf. 215) yield a two-term distinction between thematic and athematic direct objects. The first objection that must be raised is that Middle Formation, Adjectival Passive Formation and Nominal Formation do not invariably apply to all transitive

resultatives (217a-c) (Goldberg 1991: 69-70; 1995: 182-3; Jackendoff 1990a: 236-7). The distributional mismatches come out in full relief when we include environments such as the passive, which can foreground the PATIENT/force recipient of both transitive and intransitive resultatives alike (217d, d') (Jackendoff 1997: 544).

(217) a. *The washer loads full easily. (from Goldberg 1995: 182)
b. *washed-clean clothes (from Jackendoff 1990a: 236)
c. *the driving of him crazy (from Goldberg 1995: 183)
d. The table has been wiped clean.
d'. The soles had been walked off Wally's shoes by the time he finished the Walk for Hunger. (from Jackendoff 1997: 544)

My second objection concerns the use of syntactic tests/constructions as a means to factor out two clearly distinguished classes of direct objects. It is imperative that each of these 'tests' be regarded as a construction in its own right, conditioned by semantic principles that are part and parcel of the construction as a whole. Goldberg has extensively characterised the MIDDLE Construction, and I refer to her discussions in Goldberg 1991 (72-3) and 1995 (183-5) at this point. Let me briefly offer a few remarks on the MIDDLE Construction to illustrate the Construction-grammar opposition to the syntactic tests in (215): a sentence such as *The metal hammers flat easily* requires that the unexpressed initiators be indefinite, that the SUBJECT-entity has some inherent quality that favours the event denoted by the verb, and that the event is intended by the unexpressed initiators (Goldberg 1995: 183-4). In a sentence such as **John eats sick easily*, however, the initiator is explicitly mentioned and anything but indefinite, there is no inherent quality in John that favours his getting sick, and this result state is certainly not intended by him (cf. Goldberg 1995: 184-5). To use a construction such as the MIDDLE to establish a distinction between two classes of arguments without taking into account the particular semantics of this construction is therefore opportunistic.

Since the evidence that Carrier and Randall have brought to bear on the postverbal NPs of the resultative sentences in (212-4) does not support the athematic status of these NPs, other grammarians have tried a different tack. Rothstein argues that an intransitive activity verb is shifted into an accomplishment when it is found in a resultative sentence because only accomplishments, but not activities, can have a result state: "The resultative forces the aspectual class of the matrix verb to shift in order to allow the resultative to be interpreted" (2000: 257). In order to shift an activity verb such as *sing* into an accomplishment verb, a THEME argument must be added to the lexical representation of the verb (218a, b). More precisely, in the resultative sentence *Mary sang the baby asleep*, Mary performs the activity of singing, which results in the baby being asleep at the culmination point of the singing activity (Rothstein

2000: 258).[127] The THEME argument is provided so that "the baby's progress along the path to sleep" may serve as "the scale of measuring the singing event", and the resultative phrase denotes the property of the THEME argument at the culmination point of the accomplishment (Rothstein 2000: 259).

(218) a. Mary sang ⇒ Mary sang the baby asleep.
b. SHIFT (λe.(DO(SING))(e) ∧ Ag(e)=x) = λyλe.SING(e) ∧ Ag(e)=x ∧ Th(e)=y
(from Rothstein 2000: 257)

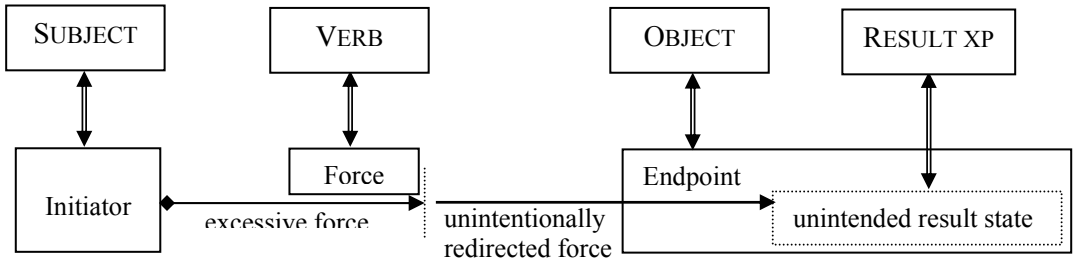
Rothstein's lexical-rule account has against it that it must rely on two different sememes of the verb *sing*, one of which expresses an activity and the other an accomplishment. Lexical rules have already been criticised in various places (cf. 8.1.3 and 9.2.1), so a few critical remarks will suffice here: in the first place, the accomplishment sense of *sing* requires us to buy an improbable verb meaning ('x performs the activity of singing, affecting another entity'). Moreover, the accomplishment sememe of *sing* can only be deduced from the appearance of this verb in contexts where it is followed by an NP and a resultative phrase; on a constructional account, this syntactic pattern is not a projection of the accomplishment semantics of *sing*, but constitutes a special construction that the verb *sing* can be associated with:

> Instead of positing a new sense every time a new syntactic configuration is encountered and then using that sense to explain the existence of the syntactic configuration, a constructional approach requires that the issue of interaction between verb meaning and constructional meaning be addressed. (Goldberg 1995: 12)

My analysis of what I will call the EXCESSIVE RESULTATIVE Construction (ERC) comes out differently from the discrete accounts discussed so far. The force-dynamic event underlying the ERC is the same as that posited for the TRC. As a consequence, the postverbal NP in the ERC is assumed to bear a semantic relation to the verb like the OBJECT in the TRC, namely as the endpoint of the force transmitted from the SUBJECT-entity. The conceptualisation of the ERC is not identical to that of the TRC in all respects, though: while the initiator in the sentence *John painted the door red* volitionally directs his force at the endpoint *the door*, with the intention of changing a property of its colour dimension, Mary does not intend to become hoarse by singing in the sentence *Mary sang herself hoarse*. Rather, the initiator performs her activity so excessively (cf. Simpson 1983: 145) that part of the force that she emits is unintentionally redirected onto another entity, which is thereby changed in one of its properties.

[127] For an earlier formulation of a causative rule turning an intransitive verb into a causative verb with a direct object and a resultative XP, see Randall (1983: 84).

Figure 9: Model of force dynamics behind the EXCESSIVE RESULTATIVE Construction



In the canonical case, the excessively performed activity has repercussions on the initiator itself. Since a person fulfils two functions in such a construction, it is not represented as a unitary entity, but is divided up into a sentient initiator-self and a physical endpoint-self. The endpoint-self is usually represented by a reflexive pronoun (*John ate himself sick*), but can also be indicated by a body part only (e.g. *Mary cried her eyes blind*). In some cases, the excessive activity may also be construed as having an unintended effect on another entity (*The dog barked the baby awake*).[128] Whether we need to assume a distinct ERC or whether it would be sufficient to regard the relations diagrammed in figure 9 as a semantic extension of the prototypical TRC is open to discussion.

Some final remarks are necessary on what might have motivated such an uncanonical construction as the ERC. In the great preponderance of instances, English verbs are associated with force-dynamic constructions that are 'transitive' in the sense that they denote an event of force transmission from a SUBJECT to an OBJECT (219a, a'). 'Intransitive' force-dynamic constructions, describing events in which a SUBJECT-entity emits energy that is not directed at another entity, are instantiated by only a small number of verbs (219b) (for a discussion of the prototypicality of transitive sentences in a descriptive framework, see Biber *et al.* 1999: 392). To put it another way, transitive constructions have a high type frequency because a large number of different verbs can be associated with them, while only a small number of verbs is regularly associated with intransitive constructions. As a consequence, there seems to be a tendency for intransitive constructions to adjust to the more prototypical construction-type by developing transitive spin-offs (see also Croft 1991: 265-7): verbs typically associated with the INTRANSITIVE ACTIVITY Construction are also found in the transitive *Way*-Construction (219c), the COGNATE-OBJECT Construction (219c') and the PATH-OBJECT Construction

[128] Boas raises the question of what principles determine whether the OBJECT-entity must be a reflexive (*He talked himself/ *Joe blue in the face*) or can be realised by both a reflexive and a non-reflexive NP (*Jenn danced herself/ Pat tired*) (2002: 37). Although idiosyncrasy certainly plays a role in such an exceptional construction, the choice of OBJECT-entity also depends on our world knowledge — excessive talking does not make another entity blue in the face. Incidentally, it is possible to use a non-reflexive NP after *talk* (*Joe talked his audience into a stupor*).

(219c"). What all of these constructions have in common is that they provide transitive force-dynamic contexts for prototypically intransitive activity verbs by enriching the intransitive construction-type with an OBJECT-slot that incrementally measures out the activity denoted by the verb (for a more extensive characterisation of these constructions, see Tenny 1994: 38-43). This account carries over straightforwardly to the ERC, with the one reservation that this is not an INCREMENTAL-THEME Construction, but a RESULTATIVE Construction, in which the OBJECT-entity is changed in a specific property named by the resultative phrase (219d, d').

(219) a. John kicked the dog. (TRANSITIVE ACTIVITY Construction)
a'. John painted the door red. (TRANSITIVE RESULTATIVE Construction)
b. John was laughing. (INTRANSITIVE ACTIVITY Construction)
c. John laughed his way across the room. (transitive *Way*-Construction)
c' John laughed a mirthless laugh. (transitive COGNATE-OBJECT Construction)
c". John and Mary walked the trail. (transitive PATH-OBJECT Construction)
d. Mary laughed herself silly. (transitive EXCESSIVE RESULTATIVE Construction)
d'. The machines pounded us deaf. (transitive EXCESSIVE RESULTATIVE Construction)

Since transitive constructions are the 'ideal' or "superprototypical" English construction-type (Croft 1991: 270), intransitive constructions are sometimes coerced into transitive frames to accommodate them to the prototype. The primary determinant of whether a construction-type is productive and can create constructional spin-offs is therefore its type frequency (Goldberg 1995: 134).

Yet type frequency is only part of the story. Although transitive constructions have a high type frequency, whereas the INTRANSITIVE ACTIVITY Construction, for example, is only associated with narrowly restricted verb classes (such as the verbs of motion and the verbs of sound emission/speech production), the latter construction is anything but infrequent in English. This seems to be due to its high token frequency: even if there is only a small number of verbs that typically occurs in it, verbs such as *run*, *shout* or *cry* are high-frequency verbs that guarantee the deep entrenchment of this construction in the system of English grammar. The strong association of the verbs of speech production/sound emission and the verbs of motion with the INTRANSITIVE ACTIVITY Construction makes the use of these verbs in transitive constructions rather unconventional, even if this represents the more prototypical construction-type: "Because memory is associative, similar verbs used in the same constructions are classified together by general categorization processes" (Goldberg 1995: 133). The ERC may be closer to the prototypical transitive construction type, but it has a low token frequency because vanilla verbs such as *run*, *shout* and *cry* are resistant to being used in other than the INTRANSITIVE ACTIVITY Construction with which they are almost exclusively associated: "people tend to use lexical items in the same constructions in which they have heard those items used by others" (Goldberg 1995: 133). As a consequence, the ERC is not a very frequent con-

struction and is subject to a high degree of collocational restriction (Goldberg 1995: 192), with even minor divergences leading to ungrammaticality (220).

(220) a. Mary ran herself to exhaustion.
a'. ?Mary ran herself exhausted. (ROS: 40)
b. He shouted himself hoarse.
b'. *He shouted himself angry. (ROS: 88)
c. She cried herself to sleep.
c'. ??She cried herself calm. (ROS: 53)
d. He ate himself sick.
d'. ??He ate himself full. (ROS: 67)

9.3.1.4 Overview of functional map I

Table 10 provides a systematic overview of the four RESULTATIVE Constructions discussed in the previous sections. Like Goldberg and Jackendoff (to appear), I assume that resultative patterns do not constitute "a unified phenomenon", but should be treated as "a family of sub-constructions, united by related but not identical syntax and by related but not identical semantics". In my force-dynamic analysis of resultatives, these constructions differ as to which of the two participants, the initiator and/or the endpoint, is profiled in the conceptualisation of the resultative event (profiled participants are printed in boldface). Both the ERC and the TRC put the initial focus on the initiator and the second focus on the endpoint, but whereas the result state is intended in the TRC, it is an unintended side-effect in the ERC. As has been suggested above, these two constructions could also be folded into one construction-type, with the TRC forming the prototypical core and the ERC an unprototypical extension.[129] The PRC profiles the endpoint and places only an optional second focus on the initiator, while the ARC conceptualises a resultative event as happening of its own accord, without anyone being responsible for it.

[129] This move might also be descriptively more adequate because there seem to be instances of the ERC in which the initiator actually intends the result by performing an activity to excess: *John wiggled himself loose./ Mary wiggled her tooth loose*.

Table 10: Functional map of Resultative Constructions differing on the profiling dimension

Participants profiled in the resultative event	**Resultative construction types**
Initiator and endpoint profiled (unintended result)	EXCESSIVE RESULTATIVE CONSTRUCTION **Mary** sang **herself** hoarse./ **The dog** barked **the baby** awake.
Initiator and endpoint profiled (intended result)	TRANSITIVE RESULTATIVE CONSTRUCTION **The waitress** wiped **the table** clean./ **John** made **Mary** happy.
Endpoint profiled Initiator backgrounded (or second focus)	PASSIVE RESULTATIVE CONSTRUCTION **The table** was wiped clean (by **the waitress**).
Endpoint profiled Initiator not conceptualised	AUTONOMOUS RESULTATIVE CONSTRUCTION **The bottle** broke to pieces.

9.3.2 Functional map II: Resultative and Motion Constructions

There is hardly a publication on resultative sentences that does not also evoke the issue of motion patterns like those in (221):

(221) a. Mary pushed the car to the garage.
b. John threw the ball onto the roof.
c. The children chased the cat behind the house.

Intuitively, there is a semantic similarity between (221a) and a resultative sentence such as *Mary wiped the table clean*: in the latter, the resultative XP denotes the final state of the direct object at the end of the wiping-event, while the PP *to the garage* expresses the final location of the object at the end of the pushing-event. Two common approaches are usually taken by discrete grammars trying to relate resultative and motion sentences. One is to argue that locative PPs are resultative predicates as well (e.g. Wechsler 1997: 313-4). Interestingly, this idea is not only articulated in formal grammars where the PP is regarded as a predicate taking the postverbal NP as its subject argument (Aarts 1997: 337), but the same note is sounded in a considerable number of descriptive grammars as well. Huddleston and Pullum, for example, maintain that "assigning a location to something is comparable to assigning it a property" (2002: 257), and Burton-Roberts lumps together the resultative and locative phrases in "*Melvin made the pudding **too sweet***" and "*Stella put the fudge cake **under the bed***" as "object-predicatives" (1991: 160; cf. also Brown and Miller 1991: 332; Downing and Locke 2002: 53-4; Young 1980: 130-1).[130] Alternatively, result states are sometimes argued to constitute abstract places (e.g. Carrier and Randall 1993: 121).

[130] Other reference grammars classify locative PPs as 'obligatory adverbials' (e.g. Biber *et al.* 1999: 131; Ek and Robat 1984: 319; Quirk *et al.* 1985: 55). This term opens a nasty can of worms for discrete grammatical frame-

I argue that the unification of states and places is missing too much because it cannot account for the different conceptualisations behind RESULTATIVE and MOTION Constructions. In a TRANSITIVE RESULTATIVE Construction, there are only two participants, an initiator and an endpoint, while there are three participants in the TRANSITIVE MOTION Construction (TMC) illustrated by (221), namely an initiator, an endpoint, and a location (Napoli 1989: 50). Result states are not participants that could be conceptualised independently of other participants, but merely denote properties of one of the participants in the event.[131]

Drawing on Croft (1991: 198-9), I will utilise the notions of 'figure' and 'ground' to analyse the force-dynamic event behind the TMC. In the event conceptualised by the sentence *Mary pushed the car to the garage*, *Mary* is the initiator, who transmits physical force onto the endpoint *the car*. As a result of this force transmission, the car changes its location in space. The TMC conceptualises this change of location by setting the car against the background of another entity, in this case the garage. In figure/ground terminology, the car is the figure, whose movement in space is measured against a static ground, the garage. The preposition *to* makes explicit that the figure entity approaches the ground entity, and the force-dynamic event is completed when the figure has reached the ground. Other prepositions can express different relations between figure and ground: the figure can also be conceptualised as moving away from the ground (*John pushed the pram out of the house*; *John brushed some bread-crumbs from his chin*; *Mary pulled the sticker off the bottle*) as well as coming into a variety of other relations with it (*John threw the ball onto the roof*; *Bob pushed the* Playboy *under the sofa*).

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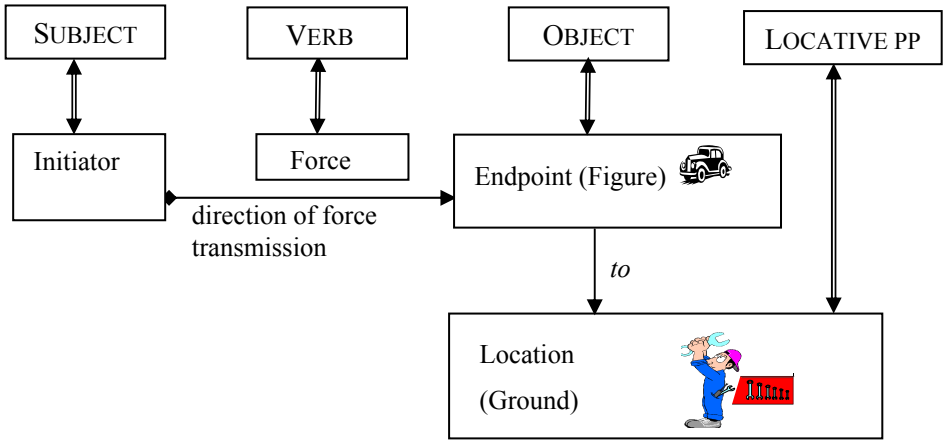
works, though: locative PPS defy easy classification because they are semantically adjunct-like, but are obligatory like complements. 'Obligatory adverbial' may capture these oscillating qualities of locative PPS, but it is a "contradiction in terms" for most discrete grammarians (Aarts 1997: 333).

[131] In contrast to resultative PPS, locative PPS do not show any predicative qualities. While it is odd to refer to a resultative PP with a personal or relative pronoun (cf. a, b), this is unproblematic for locative PPS (cf. a', b').

a. ?John broke the glass to pieces. They were all over the floor. (ROS: 46)
a'. Mary pushed the car to the garage. It was a squalid place. (ROS: 19)
b. ?John broke the glass to pieces, which he later picked up. (ROS: 39)
b'. Mary pushed the car to the garage, which was owned by a seedy-looking man. (ROS: 19)

Although the claim that locative PPS are no predicates is a minority view, it is also shared by Bresnan (2001: 275-6).

Figure 10: Conceptualisation behind the TRANSITIVE MOTION Construction



The major difference between the TRC and the TMC resides in the way that the initiator's force is transmitted onto the endpoint: in the TRC, the force is directed onto one of the dimensions making up the conceptualisation of the OBJECT-entity. In the TMC, on the other hand, the force is targeted at the endpoint as a physical entity that can be transposed in space. Verbs such as *paint* and *wipe* activate a particular region within an entity, whereas verbs such as *push* and *throw* profile the entity as a movable physical object[132]; as a consequence, the endpoint is changed in one of its properties in the TRC, and in its location in space in the TMC. Since location in space is not an inherent quality of the endpoint, the new location cannot be expressed by an AP, but must be indicated through a comparison with another entity in a figure/ground configuration.[133] As sentences such as *Fred stuffed the papers in the envelope* and *Sam squeezed the rubber ball inside the jar* demonstrate, the conceptualisation diagrammed in figure 10 is not a projection of the lexical properties of the main verb, but stems from the semantics of the construction as a whole (Goldberg 1995: 158-9).

The TMC has a number of similar characteristics to the TRC. To begin with, the VERB-slot can also be instantiated by what I will call 'default motion verbs' in analogy to 'default resultative verbs' (cf. 9.2.3). While verbs such as *push*, *roll* and *throw* specify the manner in which a physical entity is moved, the verbs *lay*, *put* and *set* only indicate that the initiator

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[132] Goldberg and Jackendoff (to appear) point to a class of sentences in which the movable object remains implicit: *Bill spit out the window*; *Bill bled on the floor*; *The toilet leaked through the floor into the kitchen below.*

[133] It is important to note that the figure/ground configuration pertains to the relation between endpoint and location, and not to the relation between initiator and location, which is inconsequential to the conceptualisation behind the TMC. It is true that in the sentence *Mary pushed the car to the garage* Mary also ends up at the garage, but she obviously does not end up on the roof in the sentence *Mary threw the ball onto the roof.* The former sentence represents an instance of what Talmy calls "extent causation" because the initiator must impinge on the endpoint throughout the event, while the latter sentence exemplifies Talmy's "beginning-point causation"; it is enough that the initiator applies force to the endpoint at the beginning of the event in order to set the entity in motion (1976: 63-4, 70-2). Whether a sentence represents an instance of extent causation or beginning-point causation is part of our world knowledge: we know that it is not enough to give a broken car a single push for it to move to a garage, whereas our experience tells us that a ball can fly somewhere on its own after sufficient force has been applied to it.

transmits force onto a movable entity, but contain only minimal information on the exact manner of force transmission (222). Like the default resultative verbs, the default motion verbs cannot be used in a corresponding ACTIVITY Construction (**John was putting the vase*), while other motion verbs are compatible with this construction (*Mary was pushing the car*). The reason for this divergent behaviour seems to be that the low manner-component in the semantics of default motion verbs makes them pragmatically insufficient for the ACTIVITY Construction (cf. Tenny 1994: 204-5).[134] On this account, we do not need to take recourse to problematic terms such as "obligatory adverbial" (Biber et al. 1999: 151) or "subcategorized adjunct" (Dowty 2000: 59) to explain the behaviour of sentences with verbs such as *make* or *put*.

(222) a. Mary laid the magazine on the table.
b. John put the vase on the floor.
c. The waitress set a plate of food down in front of the guest.

Again like the TRC, the TMC has a prototypical core in which the force transmission is physical (223a), and extensions where the force has a more abstract social quality (223b-d).

(223) a. Mary pushed the car to the garage.
b. Sam asked him into the room. (from Goldberg 1995: 161)
c. Sam sent him to the market. (from Goldberg 1995: 161)
d. Sam showed him into the livingroom. (from Goldberg 1995: 162)

The 'prospective' verbs *want* and *order*, which we already encountered in the TRC (cf. 9.2.3), crop up in the TMC as well (224). Both are actually more frequent in motion than resultative sentences in my BNC extract; when we only compare the appearance of *want* and *order* in the TMC and the TRC, *want* appears in over 65%, and *order* in over 80% of all cases in the TMC.[135] Again, there are subtle semantic differences between these verbs in infinitive constructions such as *Mary wants/orders John to visit her* and the TMC. In the TMC, "some kind of receiving, possessing or experiencing" of the OBJECT entity is implied (Borkin 1973: 53), and the time-span between the utterance of the wish or order and its expected fulfilment is rather strongly telescoped (Borkin 1973: 52).

(224) a. I want everyone out of here except Staff Sergeant Gordon and me (BNC HTJ: 3153).
b. I don't want you in my home (BNC H8F: 143).
c. When he came to the car, Ana had established herself in the back with Mitch and he would have needed to be extremely unpleasant to order them out (BNC HGK: 3032).

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[134] Interestingly, the event of a figure moving away from the ground seems to be pragmatically sufficient for an ACTIVITY Construction even in the absence of more specific manner information in the verb: *Sally is removing the mud* is as acceptable as *Sally removed the mud from her shoes*.

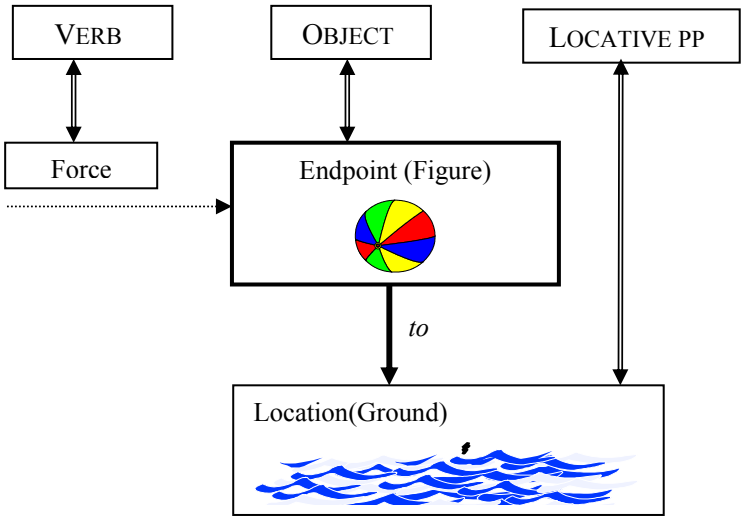
[135] Nevertheless, compared to infinitive constructions such as *John wants/orders Mary to come back* and direct-object constructions such as *John wanted/ordered tea*, the TRC and the TMC are marginal constructional frames for *want* and *order*. Of almost 2,000 instances of *want* extracted from the BNC, only 52 show this verb in the TRC and the TMC; similarly, *order* appears in the TRC and TMC in just 33 out of about 1,000 instances.

d. [O]rdering her roughly out of the car, they marched her to the command post where a fat sergeant ... looked her up and down (BNC CK8: 1944).

Like resultative sentences, motion patterns form a family of related constructions that can be distinguished along the profiling dimension. In addition to the TMC, which profiles both the initiator and the endpoint, there is a PASSIVE MOTION Construction (PMC) that focuses on the endpoint of the motion event and puts the initiator into the background (225a). In analogy to the ARC, there is an AUTONOMOUS MOTION Construction (AMC), which conceptualises a figure object as moving to a ground location by itself (225b, b'). Figure 11 illustrates the conceptualisation behind the sentence *The ball rolled into the river*.

(225) a. The car was pushed to the garage (by Mary).
b. The ball rolled into the river.
b'. The oil floated onto the coast.

Figure 11: Force-dynamic conceptualisation behind the AUTONOMOUS MOTION Construction



The autonomous meaning is not inherent in a verb such as *roll*, but stems from the semantics of the AMC. Motion events allow various event views: the sentence *The child rolled the ball into the river* profiles both the initiator and the endpoint, whereas *The ball rolled into the river* leaves the initiator and her force out of the conceptualisation, focusing on the change of location of the ball instead.

The TMC conceives of the initiator as intending the change of location of the physical object. The sentences in (226) illustrate the EXCESSIVE MOTION Construction (EMC), in which the initiator performs an activity to excess, thereby unintentionally causing the change of location of another entity (the conceptualisation is the same as that of the ERC in figure 9, with the only difference that it is not a property, but the location of an entity that is changed). As in the ERC, the unintentionally affected entity can be referentially identical to the force transmitter (usually in metaphorical sentences such as 226a) or referentially distinct (226b-d).

(226) a. He drank himself into the grave. (ROS: 9) (from Simpson 1983: 145)
b. I ran the soles off my shoes. (ROS: 14)
(from Levin and Rappaport-Hovav 1992: 256)
c. The jury laughed the singer out of the room. (ROS: 7)
d. Frank sneezed the tissue off the table. (ROS: 30) (Goldberg 1995: 152)

Table 11 presents an overview of the family of MOTION Constructions, which differ as to whether the initiator and/or endpoint is profiled and whether the change of location is intended or not. Again, it would be conceivable to treat the TMC and the EMC as the same type of construction.

Table 11: Functional map of Motion Constructions differing on the profiling dimension

Participants profiled in the motion event	**Motion construction types**
Initiator and endpoint profiled (unintended result)	EXCESSIVE MOTION CONSTRUCTION **John** worked **himself** into the grave./ **Mary** sneezed **the tissue** off the table.
Initiator and endpoint profiled (intended result)	TRANSITIVE MOTION CONSTRUCTION **Mary** pushed **the car** to the garage./ **John** put **the vase** on the floor.
Endpoint profiled Initiator backgrounded (or second focus)	PASSIVE MOTION CONSTRUCTION **The car** was pushed to the garage (by **Mary**).
Endpoint profiled Initiator not conceptualised	AUTONOMOUS MOTION CONSTRUCTION **The ball** rolled into the river.

It has long been observed that resultative and motion patterns are mutually exclusive, i.e. that a single sentence cannot contain both a resultative XP and a motion PP (227).

(227) a. *The drawer slid **into the opening shut**. (ROS: 93)
(Levin and Rappaport-Hovav 1992: 258)
b. *Lilly yanked **out** the drawer **loose**. (ROS: 85) (from Randall 1983: 87)
c. *John danced Mary **out of the room tired**. (ROS: 100)

Various explanations have been offered for this rather general constraint.[136] Tenny, seconded by Levin and Rappaport-Hovav (1992: 257-8), argues that any event may be delimited only once; for this reason, a sentence may not contain two resultative phrases (**Mary wiped the table **clean dry***) or two directional phrases (**John flew **to Munich to Nuremberg***); *ceteris paribus*, it may not include both a resultative and a directional phrase as in (227) (1994: 78-81).[137]

[136] This is not an absolute restriction, however. The following sentence, which Randall marks as ungrammatical, was not rejected by most speakers:

The campers patted **down** their sleeping bags **flat**. (ROS: 14) (from Randall 1983: 87)

[137] Conjoined resultative or directional phrases are of course possible: *Mary drove to California and* (*to*) *Mexico* is "one event of driving with one endpoint having two ingredients" (Tenny 1994: 80; cf. also Parsons 1990: 48); a similar analysis holds for *Mary wiped the table clean and dry*.

The single delimiting constraint is, however, invalidated by sentences such as "**Sam kicked Bill black and blue toward the door*" (Goldberg 1995: 86) and *John broke the vase to pieces*. In the former example, the directional PP only specifies the direction but does not delimit the event, yet the sentence is ungrammatical nevertheless (Goldberg 1995: 86); in the latter sentence, the event is already delimited without the resultative phrase, but the addition of a resultative PP does not render the sentence ill-formed. Goldberg therefore tries to come at the problem from a different angle. She maintains that a locative phrase denotes a concrete path, while a resultative phrase describes a metaphorical path, with the result phrase being a "metaphorically interpreted goal phrase" (1995: 84). If we further assume that a single event can only describe a unique path, the sentences in (227) are ruled out because they describe a concrete and a metaphorical path at the same time (Goldberg 1995: 83).

Maybe so, but I am hesitant to give resultative and directional phrases a unified conceptual treatment. The force-dynamic model offers a more straightforward explanation of why resultative and directional phrases are mutually exclusive in the same sentence than the rather speculative notion of a figurative path. In resultative sentences, the force denoted by the verb is directed at a specific property dimension of the OBJECT-entity, while it is directed at the entity as a movable physical object in motion patterns. In a single event, however, the same force cannot target different aspects of the endpoint at the same time, but can highlight only one aspect of a conceptually complex entity. A sentence such as (227c), which forces us to focus on Mary as a movable entity and on her physical condition at the same time, is therefore ruled out. This restriction also explains why the RESULTATIVE Construction cannot be combined with TRANSFER Constructions (228). In a TRANSFER Construction, the initiator (who is only implied in (228c)) moves a physical object towards a new (intended) possessor. As a consequence, the OBJECT-entities *the vase*, *the egg* and *the letter* are conceived of as movable objects, and are not highlighted in one of their property dimensions, outlawing the combination with the RESULTATIVE Construction.

(228) a. *I sent **John** the vase **broken**. (on resultative reading) (from Simpson 1983: 147)
b. *John cooked **Mary** the egg **hard**. (from Bresnan and Zaenen 1990: 53)[138]
c. ***Mary** received the letter **flat**. (on resultative reading) (from Jackendoff 1990a: 230)

Before leaving the family of MOTION Constructions, we must turn to a group of motion patterns that have become hot spots of syntactic discussion in the last few years. As has been indicated above (9.3.1.3), Rappaport-Hovav and Levin have recently revisioned the DOR and argued for an event-based approach. This new line of analysis has, among other things, been

[138] *John cooked the egg hard for Mary* (ROS: 3) is an ordinary TRC that is elaborated with a beneficiary. In contrast to **John cooked Mary the egg hard* (ROS: 87), this sentence does not imply a transfer-sense.

triggered by patterns in which the locative phrase refers to the subject NP, although there is also a direct-object NP in the sentences (229). Rappaport-Hovav and Levin call this the "subject-oriented transitive-based pattern" (2001: 771).

(229) a. John and Mary danced the tango across the room.
b. Bob flew British Airways to London.
c. Mary followed Pierce Brosnan into the store.

The direct objects in (229) are not force recipients, but constitute exceptional realisations of the object position. In (229a), the direct object *the tango* describes the performance denoted by the matrix verb more closely (cf. also *John ran a marathon to Athens*). The object *British Airways* in (229b) supplies the means by which the motion event is performed (cf. also *Bob took the car to London*). In (229c), Pierce Brosnan determines Mary's path, and the sentence has approximately the meaning that 'Mary walked into the store behind Pierce Brosnan' (cf. also *Mary accompanied her husband into the store*). A more extensive discussion of these cases can be found in Goldberg and Jackendoff (to appear), who analyse the *dance-the-tango*-cases as complex predicates and suggest additional subconstructions for the *fly-British-Airways* and *follow-Pierce-Brosnan*-cases.

The patterns in (229) are closely related to an objectless motion sentence such as *Mary ran to the door*, which is a subject-oriented intransitive-based pattern (Wechsler 1997: 312). Discrete grammars classify the verb *run* (or its VP) in the sentence *Mary ran* as an activity (230a-a"), but as an accomplishment in the sentence *Mary ran to the door* (230b-b") (Hoekstra 1992: 157-8; Parsons 1990: 182-5; Pustejovsky 1991: 62-3). The two verb senses are again frequently related by lexical processes; Levin and Rappaport-Hovav, for example, argue that directional run_2 can be derived from the activity verb run_1 by a Lexical Subordination Rule: [x GO TO y BY [run_1]] (1992: 260; see also Pustejovsky 1991: 63; Van Valin 1990: 225).

(230) a. Mary ran for 30 minutes.
a'. Mary almost ran. (unambiguous)
a". Mary is running. ⊃ Mary has run.
b. Mary ran to the door in five seconds.
b'. Mary almost ran to the door. (ambiguous)
b". Mary is running to the door. ⊅ Mary has run to the door.

Whether they contain a direct object or not, subject-oriented motion patterns are unusual because, unlike in an object-related sentence such as *Mary pushed the car to the garage*, the subject is both the initiator of the activity and is changed in her location. There have been various attempts to accommodate subject-oriented motion patterns more closely to the better understood object-oriented patterns. One option is to argue that in subject-oriented patterns, "agent and affected theme semantics are conflated on a single argument", i.e. that the subject is both an AGENT and a THEME in *Mary ran to the store* (Wechsler 1997: 313; see also Par-

sons 1990: 80-1); on this view, it would be possible to argue that the locative phrase refers to an affected theme in object and subject-oriented patterns alike. Yet the contention that the subject is both an AGENT and a THEME contradicts the asymmetry of force-dynamic events. The same person can serve both as the initiator and the endpoint in a single event, but the endpoint must then necessarily be expressed by a reflexive pronoun: *John threw himself in front of the train*; *Mary dragged herself to school*.[139] While all of these sentences indicate that a volitional initiator acts on his or her body, this meaning is not apparent in *Mary ran to the door* and cannot normally be brought out by a reflexive pronoun (cf. **Mary ran herself to the door*).

Rappaport-Hovav and Levin opt for their event-based analysis instead (cf. 9.3.1.3). The one-argument-per-subevent condition requires every subevent to be identified by an argument in the syntax, but only when the two subevents are not temporally dependent (cf. *John drank himself silly*). In sentences such as *John danced across the room*, Rappaport-Hovav and Levin theorise, the dancing-event and the across-the-room-event "are temporally co-extensive and unfold at the same rate. The event denoted by the verb begins when the progress towards the result begins, and it necessarily extends until the result is achieved" (2001: 775). They go on to claim that the verb and the locative phrase act as co-predicators of a "coidentified" event (2001: 782); more precisely, the sentence *John danced across the room* represents a co-identified 'dance-across-the-room' event. As a consequence, the shared participant of the co-identified subevents need not be expressed twice, but can show up only once in the syntactic representation of the sentence (2001: 782). In fact, Rappaport-Hovav and Levin maintain that the shared participant is obligatorily realised only once because this gives the sentence "the tightest event structure", which is claimed to be in harmony with Grice's maxim of quantity (2001: 782). I have already criticised the idea of temporal dependence and event co-identification above (cf. 9.3.1.3); a sentence such as *Mary ran to the door* denotes only one event of Mary's running, and (*to*) *the door* expresses the final location of the participant in the running-event, but is not an event in itself. Moreover, to evoke Grice's maxim of quantity to explain why the shared participant is expressed only once begs the question; if there were really two subevents, whether co-identified or not, it is not clear why the maxim of quantity should override the principle of iconicity in systematically ruling out sentences such as **Mary ran herself to the door*.

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[139] The reflexive object can always be replaced with a non-reflexive NP in these cases (*Sue dragged her daughter to school*; *John threw Bob in front of the train*). This is also possible in the unusual sentence *John danced himself out of the room* (ROS: 30), which evokes John as a volitional initiator and a physical endpoint (cf. *John danced Mary out of the room*; ROS: 27).

Tenny pursues still another idea. She points to the fact that verbs of motion also appear in the PATH-OBJECT Construction, in which a direct object incrementally measures out the event denoted by the verb (e.g. *Mary ran a mile*; *John climbed the ladder*) (1994: 17). This observation leads to her assertion that a sentence such as *Mary ran to the garage* represents a case where the incremental direct object is implicit and denotes the distance to the garage (1994: 77). The basic idea behind the incremental-theme analysis has recently been reproposed by Rothstein, who hypothesises that "the locational expression denotes a path which is the incremental argument of the verb, and which is 'used up' gradually as the event unfolds" (2000: 262). If the incremental-path analysis were somewhere around the right track, we must ask ourselves why the putatively implicit path can almost never be overtly supplied (**Mary ran the street to the store*). For a further difficulty, the sentence *Mary ran to the garage* does not mean that Mary directs energy onto the path between her and the garage, gradually using it up in the course of the event, but that Mary puts energy into the running-activity and ends up at the garage at the end of the event.[140]

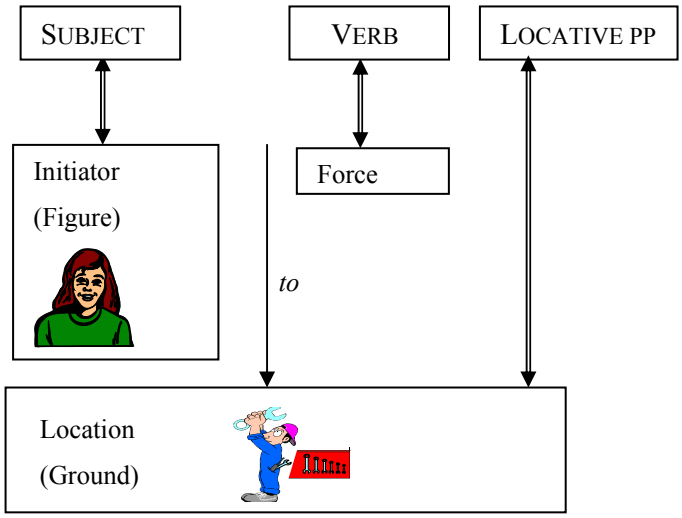
None of the attempts to bring sentences such as *Mary ran to the garage* more in line with object-related directional patterns (*Mary pushed the car to the garage*) or INCREMENTAL-THEME Constructions (*Mary climbed the ladder to the last rung*) offers any pioneering solutions to the problems posed by subject-related motion patterns. I think that there has been scholarly overemphasis on the fact that the subject in these motion patterns is both the initiator of the activity and the entity that is changed in her location. Drawing on my approach to the TMC, I venture a different analysis of what I will call the SPONTANEOUS MOTION Construction (SMC).

While the initiator transmits force onto an endpoint in a TRANSITIVE ACTIVITY Construction (*Mary was pushing the car*), the force created in the INTRANSITIVE ACTIVITY Construction (*John was running*) is not directed at another entity, but goes into the activity the initiator performs. The same verbs can usually appear not only in these activity constructions, but also in related accomplishment constructions: a verb such as *push* is found both in the atelic TRANSITIVE ACTIVITY Construction and the telic TMC (*Mary was pushing the car*; *Mary pushed the car to the garage*), and a verb such as *run* can appear both in the atelic INTRANSITIVE ACTIVITY Construction and the telic SMC (*John was running*; *John ran to the store*); the accomplishment senses of the TMC and the SMC stem exclusively from the meaning of these

[140] Of course, there are INCREMENTAL-THEME sentences such as *Mary ran the long road to the next village* or *John climbed the ladder to the last rung*, in which the force of the initiator indeed goes through the path by increments, and in which the last increment of the path is named by the PP. My sense is that these cases are analo-

constructions, and not from putative accomplishment sememes of the respective matrix verbs. The TMC conveys the sense that when the initiator stops supplying energy at the end of the event, the endpoint is at a different location than before, but it does not specify the final location of the initiator, which can, however, be inferred from our naive understanding of physics (cf. *John pushed the car to the garage* vs. *John threw the ball onto the roof*; cf. footnote 133). Along the same lines, the SMC denotes a motion activity that comes to an end when the initiator stops putting energy into the activity. Again, the fact that the initiator ends up at a different location at the end of the motion activity is part of our world knowledge, and it is not necessary to force an additional THEME-role onto the subject or to claim that subject-oriented motion sentences consist of an activity subevent plus a change-of-location subevent. In the sentence *Mary ran to the garage*, the NP *the garage* serves as the ground that identifies the location of the figure *Mary* at the end of the event, and the preposition *to* makes explicit that the figure moves towards the ground as in the TMC (figure 12); different prepositions again signal different relations between figure and ground: *Mary ran out of the house*; *John jumped onto the car*; *The cat walked behind the house*.

Figure 12: Conceptualisation behind the SPONTANEOUS MOTION Construction



Although there is a close analogy between the families of RESULTATIVE and MOTION Constructions, there is no such thing as a subject-related SPONTANEOUS RESULTATIVE Construction, in which the initiator performs some activity and is thereby changed in one of her properties. While our experience tells us that a person normally changes his or her location by performing a motion activity, there are hardly any experientially grounded events that are compatible with a situation in which a person is changed in one of her properties by performing

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gous to INCREMENTAL-THEME sentences such as *Mary ate the apple to the core* and *The school theatre performed the play to the final act*, but not to motion patterns like *Mary ran to the garage*.

some activity. Apparent counter-examples, which are adduced by Rappaport-Hovav and Levin as arguments in favour of their event-based approach, are more profitably analysed in different ways.

In (231a, a'), the VERB-slot of the SMC is filled by a verb of sound emission. These sentences are best analysed as instances of the SMC in which a sound stands metonymically for the motion activity (cf. 'The truck drove onto the driveway with a rumbling noise'). A condition for having a sound stand for a motion activity is that the sound is salient and that "the motion causes the sound to be emitted" (Goldberg and Jackendoff, to appear); a sentence such as **The dog barked out of the room* is ungrammatical because "the sound is not a result of the subject's motion" but is "a separate volitional act" (Goldberg and Jackendoff, to appear). The sentences in (231b, b'), on the other hand, are not examples of a SPONTANEOUS RESULTATIVE Construction (cf. Rappaport-Hovav and Levin 2001: 773-4), but are more convincingly analysed as instances of the ARC (cf. 'The line went dead with a click'; 'The garage door went open with a rumble'), i.e. in contrast to (231a, a'), the SUBJECT codes an endpoint and not an initiator.

(231) a. The truck rumbled onto the driveway.
a'. The knee replacement candidate groaned up the stairs.
(from Goldberg and Jackendoff, to appear)
b. The line clicked dead. (from Rappaport-Hovav and Levin 2001: 774)
b'. The garage door rumbled open.

Rappaport-Hovav and Levin also point to minimal pairs involving verbs such as *wiggle*, *wriggle* and *kick*, which can appear both in the ERC with a (reflexive) direct object (232a) and in a subject-related resultative pattern (232a') (2001: 774). The latter example seems to suggest that there is a SPONTANEOUS RESULTATIVE Construction, in which the initiator *John* performs a kicking-activity and is changed in one of his properties as a result. Rappaport-Hovav and Levin in fact put forward the claim that both sentences have initiators as subjects, but that (232a) contains two temporally independent subevents and (232a') two temporally co-identified subevents (2001: 777-8). Let me offer a different analysis of these examples. Sentences with inanimate SUBJECT-entities are more felicitous without a direct object (232b, b'), suggesting that we are dealing with an instance of the ARC in (232b). If the SUBJECT is filled by a volitional entity, on the other hand, a reflexive or non-reflexive direct object is preferred, as is typical of the ERC (232c, c'; cf. also 232d).[141] Minimal pairs such as those in (232a, a') are therefore extremely uncommon.

[141] The numbers given in parentheses behind the sentences indicate the number of native speakers who chose one or the other sentence (out of a total of 30 speakers). The results are in line with an example given by Goldberg and Jackendoff (to appear), who contrast the sentences *The mechanical doll wiggled itself loose*, in which the

(232) a. John kicked himself free.
a'. John kicked free.
b. One of the race cars wiggled loose inside the transporter. (ROS: 18)
(from Rothstein 2000: 261)
b'. One of the race cars wiggled itself loose inside the transporter. (ROS: 12)
c. He desperately tried to pull free. (ROS: 6)
c'. He desperately tried to pull himself free. (ROS: 24)
d. He tried to kick his legs free, but their grips were firm and his efforts made them laugh even louder (BNC FSH: 1665).

9.3.3 Functional map III: Constructions focusing on the manner or the result of an activity

Thus far, we have mapped out resultative and motion constructions along two parameters: first, whether they express force transmission that changes the state of the endpoint (the family of RESULTATIVE Constructions) or the location of the endpoint/initiator (the family of (SPONTANEOUS) MOTION Constructions); and second, which of the two participants in the resultative or motion event, the initiator and/or the endpoint, is foregrounded in the respective conceptualisation of the scene: the TRANSITIVE RESULTATIVE/MOTION Constructions have the initial focus on the initiator and the second focus on the endpoint; the PASSIVE RESULTATIVE/MOTION Constructions place the initial focus on the endpoint and an optional second focus on the initiator; the AUTONOMOUS RESULTATIVE/MOTION Constructions focus exclusively on the endpoint. Since SPONTANEOUS MOTION Constructions merely have one participant, an initiator, and do not include an endpoint, there cannot be an AUTONOMOUS SPONTANEOUS MOTION Construction and only an impersonal PASSIVE SPONTANEOUS MOTION Construction. While English does not have such an impersonal passive, it can be formed in German (*Es wurde zu den Ausgängen gerannt*). RESULTATIVE and (SPONTANEOUS) MOTION Constructions can be compared along at least one more dimension: it is not only possible to foreground or background a particular participant in the event, but also to place emphasis either on the manner of force transmission plus the result of the event or only on the result of the event.[142]

Levin and Rappaport-Hovav pose the question whether verbs of removal form a natural class in English. What verbs such as *wipe* and *clean* have in common is that they "can describe the removal of a substance or physical object ... from a *location*" (233a, b) (1991: 126).

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mechanical doll can instigate its own wiggling, and **The ball wiggled itself loose*, where the ball cannot be construed as instigating a wiggling action, and where the use of a reflexive direct object is therefore infelicitous.

[142] There is no RESULTATIVE or MOTION Construction that foregrounds the manner of activity and backgrounds the result state or location because this would contradict the telicity of these constructions. The manner of activity can be foregrounded in a special ACTIVITY Construction, the so-called CONATIVE Construction: *John cut at the cheese*; *Mary ate at the apple*; *The waitress rubbed at the counter* (see Levin and Rappaport-Hovav 1991: 135; Tenny 1994: 45-6).

(233) a. The waitress wiped/sponged *etc*. the table clean.
b. The waitress cleaned/cleared *etc*. the table.

Many grammarians propose that the sentences in (233a, b) can be given causative paraphrases. (234a) is an argument-structure representation for the TRC adapted from Van Valin (1990: 255; see also Carrier and Randall 1993: 124-5; Jackendoff 1997: 544; Pustejovsky 1991: 65), which conveys the sense that the event of the waitress's wiping the table causes the table to become clean. A causative paraphrase is also standardly given for sentences with *clean*-type verbs (234b) (Parsons 1990: 107-10).

(234) a. [wipe' (the waitress)] CAUSE [BECOME clean' (the table)] BY wiping it.
b. The waitress caused the table to become clean (by wiping it).

When we look at the causative paraphrases in (234), resultative sentences with *wipe*-type verbs and sentences with *clean*-type verbs come out as more or less synonymous. Although the paraphrases in (234) may be intuitively appealing, I have two objections against them. In the first place, I disagree with the excessive use that is made of causative paraphrases in modern syntax. A causative paraphrase for resultative sentences makes wrong predictions because, as Green already noted (1972: 90-1), the AP in a resultative sentence is much more restricted than in the causative paraphrase. In other words, a causative paraphrase is possible in many cases in which a TRC would be infelicitous (235a, b). The reason for this is that a verb such as *wipe* directs its force onto a specific dimension of the OBJECT-entity, while *cause* is like the default resultative verb *make* in not highlighting a specific dimension of the endpoint, and is therefore compatible with a much broader range of result states.

(235) a. *The waitress wiped the table stained (ROS: 93) /damp (ROS: 77).
b. The waitress caused the table to become stained (ROS: 13)/ damp (ROS: 10) by wiping it.

Although verbs such as *clean* are standardly given a causative paraphrase and are thought to lexicalise a causative event structure (they are, as a consequence, frequently called 'lexical causatives') (cf. Lyons 1968: 352), I also challenge the accuracy of causative paraphrases for these verbs. Let me briefly cast a few spotlights on the semantic differences between sentences with *clean* and their putative causative paraphrases, which should serve as an effective check against using causative paraphrases too rashly: (236a) denotes a single event, and no time delay between the waitress's activity and the result is admissible; such a time delay is, however, acceptable in a causative construction, which combines two events, a causing and a caused subevent (236a') (cf. Wierzbicka 1980: 164-6). In addition, the SUBJECT of a *clean*-type sentence must be the force transmitter (236b), something that is not necessary in a causative construction (236b') (cf. Wierzbicka 1980: 163). I therefore side with Wierzbicka, who disputes the grounds on which causative paraphrases are made: "the existence or non-

existence of such paraphrases as 'cause to become clean, broken, open, dead' is no argument at all; all these paraphrases are either highly inaccurate or superficial or both" (1980: 173; cf. also Kulikov, who argues that so-called 'lexical causatives' like *clean* or *open* are not "causatives *sensu strictu*" (2001: 888-9)). For this reason, I opt for an extremely puristic use of the term 'causative' in syntactic description: causative constructions in English are dependent on overt causative verbs such as *make* or *cause*, which introduce an additional causing subevent. While causative constructions consist of a causing and a caused subevent (which can have different initiators and need not be temporally contiguous), sentences with so-called 'lexical causatives' describe a single force-dynamic event; in other words, *clean* and *open* are not any more causative than, for example, *wipe* and *push* (cf. Randall 1983: 83; Wierzbicka 1980: 173-6).

(236) a. *The waitress cleaned the tables on Monday by putting a magic cleaning substance on them on Sunday.
a'. The waitress caused the tables to become clean on Monday by putting a magic cleaning substance on them on Sunday.
b. *The waitress's perseverance cleaned all the tables.
b'. The waitress's perseverance caused all the tables to become clean.

My second objection against causative paraphrases for *wipe*-type and *clean*-type sentences concerns the fact that the use of such paraphrases blurs the distinction between these two types of sentence. Levin and Rappaport-Hovav rightly decide against treating *wipe*-type verbs and *clean*-type verbs as a natural class of 'verbs of removal' because there is a systematic difference between them: the meaning of a *wipe*-type verb makes explicit the way in which the substance is removed from a location because it includes a manner-component (*wipe*, *scrub*, *sweep*...) or an instrument-component (*sponge*, *mop*, *vacuum* ...) (Levin and Rappaport-Hovav 1991: 130-1); *clean*-verbs, on the other hand, lexicalise a resultant state, but do not "make[.] explicit how the resultant state is achieved" (Levin and Rappaport-Hovav 1991: 130). From a force-dynamic perspective, the TRC illustrated by *Mary wiped the table clean* specifies both the manner of force transmission (*wipe*), and the result of force transmission (*clean*), while the sentence *Mary cleaned the table* leaves the manner unspecified and foregrounds only the result. Similar to a passive, the manner or instrument of the activity can be supplied in a subordinated *by*-clause, but this is an optional device. I will call resultative Constructions that emphasise the result of force transmission and leave the manner unspecified or in the background LEXICAL RESULTATIVE Constructions (LRC). (237) provides a number of examples which illustrate that the same situation can be conceptualised by either putting the initial focus on the manner of force transmission and the second focus on the result (TRC), or by putting the initial focus on the result and demoting the manner of force transmission to an optional

second focus (LRC).[143] (237d') contains one of the few English cases in which the verb in the LRC is not morphologically related to the adjective in the TRC.

(237) a. John hammered the metal flat.
a'. John flattened the metal (by hammering it).
b. Mary shovelled the road clear.
b'. Mary cleared the road (by shovelling it).
c. John pushed the door open.
c'. John opened the door (by pushing it).
d. Mary stabbed John to death.
d'. Mary killed John (by stabbing him).

This analysis of the LRC also explains the redundancy constraint observed by Randall that a resultative phrase is only licit if the verb does not already code the result state itself (238a, b) (1983: 96). There are apparent exceptions to this constraint (238c, d), but they can be accounted for by arguing that *stone-dead* in (238c) and *good and wet* in (238d) do not just reiterate the result states already implied by the matrix verbs, but serve to place particular emphasis on these final results (Randall 1983: 103, footnote 19).

(238) a. *The gardener watered the tulips wet. (ROS: 90) (from Randall 1983: 96)
b. *The maid cleaned the porch clean. (ROS: 100) (from Randall 1983: 96)
c. John killed Bob stone-dead. (ROS: 20)
d. ?The gardener watered the tulips good and wet. (ROS: 40)
(from Randall 1983: 103, fn. 19)

The relationship between the TRC and the LRC is mirrored in the family of MOTION Constructions. While the TMC puts an initial focus on the manner of the motion activity, and a second one on the change of location, there is a LEXICAL MOTION Construction that foregrounds the change of location and puts the manner of motion into the background (239).[144]

(239) a. John placed the books in a box/ on a shelf.
a'. John boxed/shelved the books.
b. The police threw the prisoners into jail.
b'. The police jailed the prisoners.
c. Mary poured the wine into bottles.
c'. Mary bottled the wine.

---

[143] Not every event has both a manner and a result component that could equally well be foregrounded. The event expressed by the sentence *The sun ripened the fruit* is more common in the LRC because it is difficult to conceptualise the manner component that is responsible for the result; the respective TRC would have to resort to a default resultative verb that leaves the manner similarly unspecified: *The sun made the fruit ripe*. Conversely, not every sentence in the TRC has a counterpart in the LRC: there are no sentences such as **John blued the wall* or **The farmer fined the corns* in analogy to *John painted the wall blue* and *The farmer ground the corns fine* because 'blue' and 'fine' do not seem to be result states salient enough to warrant lexical verbs of their own. While the relationship between the TRC and the LRC is rather systematic, there are, thus, pockets of idiosyncrasy as well.

[144] Note that I do not claim that corresponding cases of the TMC and the LMC or of the TRC and the LRC are synonymous with the exception that one foregrounds the manner of the activity and the other the result. Although the constructions are systematically related along this parameter, constructions are like words in taking on additional meanings as well. The sentence *John boxed the books* is not compatible with a violent manner component (cf. *John threw the books into boxes*), for instance. An even more extreme case of non-synonymity is exemplified by *John placed the plan on the table* and *John tabled the plan*, which are semantically quite distinct.

In addition to the LMC, (240) illustrates the SPONTANEOUS LEXICAL MOTION Construction (SLMC). The unprimed sentences are instances of the SMC and specify both the manner of the spontaneous motion activity and the change of location; the primed sentences exemplify the SLMC, which foregrounds the final location and puts the manner of the motion activity into the background. Verbs such as *enter*, *leave*, *cross* and *arrive* only code the direction of the movement, and the respective direct objects (or prepositional object in the case of *arrive*) characterise the location. In other words, while the direction is coded by the preposition and the final location by the NP it governs in the SMC, the direction is coded by the verb and the final location by its direct object in the SLMC (241) (cf. Jackendoff 2002: 365).

(240) a. John ran into the room.
a'. John entered the room (by running into it).
b. John stomped out of the room.
b'. John left the room (by stomping out of it).
c. Mary dashed across the street.
c'. Mary crossed the street (by dashing across it).
d. John shuffled to his house.
d'. John arrived at his house (by shuffling to it).

(241)

	John	ran	into	the room.
	John		entered	the room.
	John		arrived	at his house.
	initiator	manner of motion	direction	final location

The LEXICAL RESULTATIVE/MOTION Constructions also have passive counterparts, in which the endpoint serves as the initial focus and the initiator as the optional second focus. (242a) illustrates the PASSIVE LEXICAL RESULTATIVE Construction, and (242b) the PASSIVE LEXICAL MOTION Construction. Since SPONTANEOUS MOTION Constructions do not have an endpoint, the initial focus is on the new location in the PASSIVE LEXICAL SPONTANEOUS MOTION Construction (242c).

(242) a. The table was cleaned (by the waitress).
b. The books were shelved (by John).
c. The room was entered (by Mary).

Finally, there is also an AUTONOMOUS LEXICAL RESULTATIVE Construction (ALRC) (243a, a'), which does not conceptualise an initiator, but presents an event as happening to the endpoint by itself. I did not find unambiguous examples of an AUTONOMOUS LEXICAL MOTION Construction (ALMC), possibly because there is no final location that is typically conceptualised as being reached by an endpoint of its own accord (243b and b' could be regarded as instances of an ALMC, though), and there is, of course, no autonomous lexical variant of the SPONTANEOUS MOTION CONSTRUCTION because spontaneous patterns do not contain an endpoint.

(243) a. The soup cooled.
a'. The door closed.
b. In an infamous storm on 7th January, 1839, which sank many boats in the Firth, Clytus was blown away from her moorings in Troon harbour and **went aground** on Barassie beach (BNC BM6: 464).
b'. They point to a real wage drop of 10 to 12 per cent from 1790 to 1795, then a slight recovery to around 5 per cent below the 1790 level over 1797-8, followed by a plunge **bottoming** in 1800-1 at 30 per cent below the 1790 level (BNC HXC: 1029).

The constructional view allows us to dispense with the hypothesis that verbs such as *cool* have transitive-causative (*John cooled the soup*) and intransitive-inchoative variants (*The soup cooled*) (Parsons 1990: 105-6; Pustejovsky 1991: 57-8; Saeed 1997: 71-2); result-oriented constructions can either conceptualise the event as having an initiator (LRC/LMC) or as happening of its own accord (ALRC/ALMC). The autonomous-lexical construction types are rather restricted because they are subject to two preconditions: first, the result must be salient enough to warrant a lexical verb of its own (cf. footnote 143), and second, it must be conceivable that the result can be achieved autonomously. The second condition depends crucially on the SUBJECT-entity as well: (244a) is acceptable because we do not intuitively conceive of meteorological occurrences as being caused by something, whereas (244b) is ungrammatical — we know from experience that a table will not become clear unless a person clears it (see also Levin and Rappaport-Hovav 1991: 134).

(244) a. The sky cleared.
b. *The table cleared.

Table 12 gives an overview of the family of RESULTATIVE and (SPONTANEOUS) MOTION Constructions along the parameters that have been characterised in this chapter.[145]

[145] Participants (initiator and endpoint) are printed in boldface; the endpoints are bracketed in the first column because spontaneous constructions do not include an endpoint. The manner of force transmission and the result are underlined.

Table 12: Overview of resultative and motion constructions

dimensions of variation	**Endpoint: change of state**	**Endpoint: change of location**	**Initiator: change of location**
initiator first focus; (endpoint second focus) manner and result specified	TRANSITIVE RESULTATIVE CONSTRUCTION **John** pushed **the door** open.	TRANSITIVE MOTION CONSTRUCTION **Mary** placed **the books** into boxes.	SPONTANEOUS MOTION CONSTRUCTION **Mary** ran into the room.
initiator first focus; (endpoint second focus) only result specified	LEXICAL RESULTATIVE CONSTRUCTION **John** opened **the door**.	LEXICAL MOTION CONSTRUCTION **Mary** boxed **the books**.	LEXICAL SPONTANEOUS MOTION CONSTRUCTION **Mary** entered the room.
(endpoint first focus); initiator optional second focus manner and result specified	PASSIVE RESULTATIVE CONSTRUCTION **The door** was pushed open (by **John**).	PASSIVE MOTION CONSTRUCTION **The books** were placed into boxes (by **Mary**).	(PASSIVE SPONTANEOUS MOTION CONSTRUCTION) Es wurde (von **allen**) zu den Ausgängen gerannt.
(endpoint first focus); initiator optional second focus only result specified	PASSIVE LEXICAL RESULTATIVE CONSTRUCTION **The door** was opened (by **John**).	PASSIVE LEXICAL MOTION CONSTRUCTION **The books** were boxed (by **Mary**).	PASSIVE LEXICAL SPONTANEOUS MOTION CONSTRUCTION The room was entered (by **Mary**).
only endpoint manner and result specified	AUTONOMOUS RESULTATIVE CONSTRUCTION **The door** swung open.	AUTONOMOUS MOTION CONSTRUCTION **The books** fell into the box.	∅
only endpoint only result specified	AUTONOMOUS LEXICAL RESULTATIVE CONSTRUCTION **The door** opened.	AUTONOMOUS LEXICAL MOTION CONSTRUC-TION **Oil prices** bottomed at $12 a barrel.	∅

10. A figure/ground account of the Depictive Construction

10.1 Zeroing in on the semantics of the Depictive Construction

When we bear in mind that the terms for constructional roles are proper names, we can label the four roles of the DEPICTIVE Construction (DC) as SUBJECT, VERB, OBJECT and DEPICTIVE XP (245a). In the large majority of cases, DEPICTIVE phrases are realised by APS (245b), but PPS are also sometimes found (245c). The use of plain NPS as DEPICTIVE phrases is marginal in modern English[146], yet NPS commonly occur in two functionally related constructions, the DETACHED DEPICTIVE Construction and the *As*-DEPICTIVE Construction (see 10.3). The DC is not governed by the restriction that only the OBJECT-entity can be predicated of by the XP; in addition to OBJECT-related DEPICTIVE XPS (245b, c), there are also SUBJECT-related DEPICTIVE phrases (245d, e). As in chapter 7, I will refer to SUBJECT-related DEPICTIVE XPS as S-depictives, and to OBJECT-related DEPICTIVE XPS as O-depictives for the sake of convenience. In a few cases, a DEPICTIVE phrase may be ambiguous between an S-depictive and an O-depictive (245f).

(245)	a.	[SUBJECT]	[VERB]	[OBJECT]	[DEPICTIVE XP]
	b.	Mary	ate	the soup	*hot*.
	c.	John	saw	Mary	*in a blue dress*.
	d.	Mary	ate	the soup	*drunk*.
	e.	Mary	wrote	the article	*in high spirits*.
	f.	The police	arrested	John	*drunk*.

Like a RESULTATIVE phrase, a DEPICTIVE XP assigns a property to a participant in the event. Apart from that, the meaning of the DC differs markedly from that of the RC: (245b) does not communicate the sense that the soup became hot as a result of Mary's eating it, but that the soup was hot at the time that Mary ate it. It is commonly asserted that this temporal semantic relationship between the DEPICTIVE XP and one of the participants in the event indicates that DEPICTIVE phrases are adverbial in nature (e.g. Aarts 1992: 120). In addition to temporal relationships (246a), DEPICTIVE phrases can also convey other senses typically associated with adverbials, such as a conditional meaning (246b) (Aarts 1995: 78; Halliday 1967: 78). When we turn to *As*-DEPICTIVES for a moment, it is possible to postulate even more adverbial relations: *as a painter* in (246c) could be argued to have "the feel of an adjunct of manner" (Aarts 1995: 81), and *as his pupil* in (246d) might be characterised as an adjunct of reason.

[146] There is a depictive subconstruction that does not include an OBJECT (*John went jogging naked*; *Mary arrived dead*), and this subconstruction is also more tolerant of DEPICTIVE NPS: *He was born the son of rich parents* (ROS: 4); *John returned a happy man* (ROS: 4).

(246) a. John drank the beer *cold* ('while it was cold').
b. I can only carry the crate *empty* ('if it is empty').
c. I described Jim *as a painter* ('in the manner of a painter').
d. Mr Smith gave John a good mark *as his best pupil* ('because he was his best pupil').

There are a number of snags with an adverbial analysis, though. While the depictive sentence in (247a) entails that John was drunk, the adverbially modified sentence in (247a') does not necessitate such an entailment relation (Rothstein 2000: 245). Even apparently subject-oriented adverbials only characterise the way that the subject-entity performs an activity, and do not entail that this entity possesses a certain property (247b) (Rothstein 2000: 245); the same is true of apparently object-related adverbials (247b'). As a result of the different functions of adverbials and DEPICTIVE phrases, only DEPICTIVE XPs need an overtly expressed participant in the sentence that they can refer to (247c), while adverbials do not require a lexically expressed NP to refer to (247c') (Rothstein 2000: 245).

(247) a. John drove the car drunk. ⇒ ??John drove the car drunk, although he was sober.
a'. John drove the car drunkenly. ⇒ John drove the car drunkenly, although he was sober. (from Rothstein 2000: 245)
b. John greeted Mary enthusiastically, although he was secretly very reluctant to meet her. (from Rothstein 2000: 245)
b'. John read the poem beautifully, although the poem itself was terrible.
c. ??The car went round the corner drunk. (from Rothstein 2000: 245)
c'. The car went round the corner drunkenly. (from Rothstein 2000: 245)

All things considered, DEPICTIVE phrases refer primarily to an NP and do not modify the whole sentence or verb phrase as adverbials do. Adverbials modify events (Parsons 1990: 54-8; Rothstein 2000: 246), while DEPICTIVE phrases predicate of participants in events. Like Napoli, I therefore assume a distinction between modification and predication (1989: 11). Modifiers could be regarded as parts of predicates (Napoli 1989: 12), or else modification might be seen as some higher-order form of predication, with the adverbial predicating of the whole event (cf. *John drove the car*. ***This*** *happened drunkenly*), but I take no position on the matter at present. What is of relevance in our context is that DEPICTIVE phrases do not modify an event, but predicate of the SUBJECT or OBJECT-entity in the clause. The adverbial semantics that have been extrapolated from the sentences in (246) cannot therefore be directly attributed to the DEPICTIVE phrases, but follow from the fact that the SUBJECT or OBJECT-entity is both a bearer of the depictive property and a participant in the clausal event. In (246a), the AP *cold* characterises a participant that is part of a dynamic event, with the consequence that the property is interpreted as holding of the participant contemporaneously with its participation in the event; the AP *empty* in (246b) refers to the participant of a potential situation and is therefore interpreted as a property that conditions the realisation of the situation. An adverbial understanding of DEPICTIVE phrases is consequently a "chance possibility" that depends on the kind

of event which the characterised NP is part of, but is by no means a "necessary condition" (Schneider 1997: 38).

Depictive sentences, even more so than resultative patterns, have been the focus of a rather fruitless complement/adjunct debate; a thorough characterisation of their semantics, on the other hand, has never been a major scholarly preoccupation. An exception in this respect is Rothstein, who has not only provided a logical representation of the RC, but of the DC as well. (248) contains her semantic analysis of the subject-related depictive sentence *John drove the car drunk*.

(248) $\exists e\, \exists e_1\, \exists e_2\, [e =^S (e_1 \sqcup e_2 \wedge \text{DROVE}(e_1) \wedge \text{Ag}(e_1) = \text{JOHN} \wedge \text{Th}(e_1) = \text{THE CAR} \wedge \text{DRUNK}(e_2) \wedge \text{Exp}(e_2) = \text{JOHN} \wedge \text{PART-OF}(e_1, e_2)]$; PART-OF$(e_1, e_2)$ iff (i) $\tau(e_1) \subseteq \tau(e_2)$ and (ii) $\theta_m(e)_1 = \theta_n(e)_2$ (from Rothstein 2000: 250)

Let me briefly bring out the articulated nature of this logical representation. Rothstein presupposes that the depictive sentence consists of two subevents, an event of the AGENT *John* driving the THEME *the car*, and an event of the EXPERIENCER *John* being drunk. Both events are combined with the help of a summing operation to yield one complex event, and both the subevents and the complex event are existentially quantified. A mere addition of e_1 and e_2 is not sufficient, however, because the two subevents are temporally dependent in the sense that "the event introduced by the verb must be temporally contained within the event introduced by the secondary predicate" (Rothstein 2000: 248). Condition (i), which specifies the PART-OF relation between e_1 and e_2, is supposed to guarantee that the run-time (symbolised by τ) of the verbal subevent is properly contained in the run-time of the adjectival subevent (Rothstein 2000: 248-9). This condition alone does not faithfully predict the semantics of depictive sentences because it would not preclude cases such as **John drove Mary drunk*, in which John was involved in the activity of driving and Mary was drunk at the same time. Additionally, and crucially, there must be a condition that requires the two subevents to share a participant (in this case the participant *John*). A depictive sentence expresses the combination of two events "which do not just overlap temporally, but which are inextricable [sic!] attached to each other since they share a thematic participant which is involved in both these events at the same time" (Rothstein 2000: 249), a prerequisite that is specified under condition (ii) of the PART-OF-relation.

Rothstein's logical representation is a useful ploy for disentangling the various semantic threads of the DC, but it is at loggerheads with the basic tenet of functional and cognitive grammar which states that the syntax of a sentence is a more or less direct reflection of its meaning. While (248) brings out much of the nuanced semantics of the DC, it relies heavily on stipulative, primitive notions such as thematic roles and the two subconditions of the

PART-OF relation. From the perspective of cognitive and functional grammars, I am averse to the use of logical symbols and think that the subconditions of temporal relatedness and argument-sharing, as well as the rest of the semantics of the DC, are explicable on conceptual grounds.

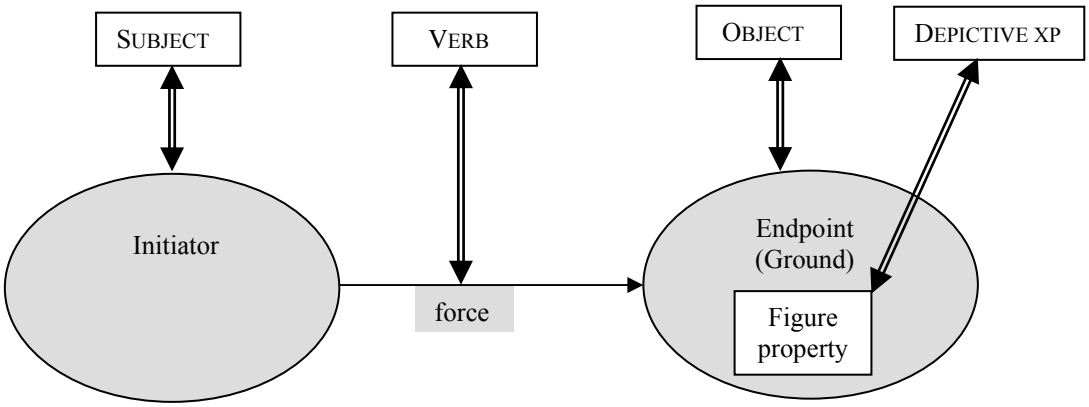
I propose that the semantic relationships underlying the DC can be illuminated by the model of force-dynamics, which also controls the RESULTATIVE and MOTION Constructions, in tandem with the figure/ground model that is familiar from Gestalt psychology. To take an example for the latter model from the perceptual domain, a book lying on a table constitutes a figure that stands out against the ground formed by the table: "The ground serves as a *framework* in which the figure is suspended and thereby determines the figure" (Koffka 1935: 184). The figure/ground relation is not only a controlling organising principle for the visual senses, but holds for all the other senses as well (Koffka 1935: 200-1). Since cognitive grammars do not assume a strict division between the perceptual and cognitive domains, it can be hypothesised that the figure/ground asymmetry is also a pervasive principle in language. A figure is that element in a semantic relationship that first catches our attention and is interpreted in relation to a ground element. A whole number of linguistic phenomena such as adverbial relations have already been profitably approached from the figure/ground perspective (Croft 2001: 329-35; Langacker 1999b: 41-2).

In the DC, a force-dynamic event serves as the basis or ground for the property denoted by the DEPICTIVE phrase. The ground event is the reference point for the figure property, which is the most salient part of the DC semantically; the event and the property are indirectly related to each other via an entity that is both a participant in the event and the bearer of the property. Gestalt psychologists have pointed out that part of the field in a perceptual figure/ground relationship is represented twice: "a part of the total field, coinciding with the area of the small figure, is *twice* represented in our environmental field, once as the small figure itself, and once as part of the larger oblong [the ground; H.S.]" (Koffka 1935: 178). The same is true of the conceptualisation underlying the DC: a particular participant serves as the reference point for the figure property, but it does not stop belonging to the ground only because it is related to the figure. Since the figure property is contingent on an entity that participates in a force-dynamic event, there is an indirect relation between the depictive property and the clausal event, which explains the apparently adverbial relations in depictive sentences (cf. 246). While the figure property refers to the force-dynamic ground event via its endpoint in an

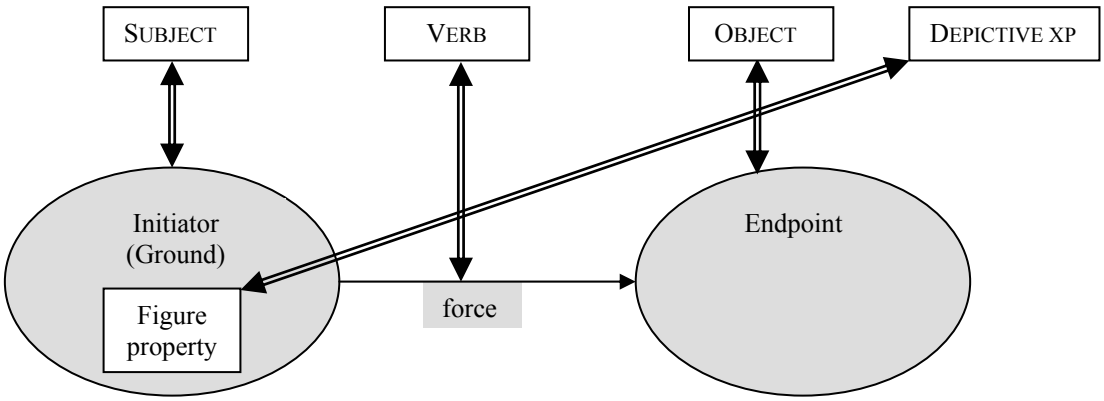
OBJECT-related DC (figure 13a), it refers to the ground event via its initiator in a SUBJET-related DC (figure 13b).[147]

Figure 13: The force-dynamic and figure/ground model behind the DEPICTIVE Construction

a. OBJECT-related DEPICTIVE Construction



b. SUBJECT-related DEPICTIVE Construction



Rothstein provides alternative derivations for sentences with S-depictives and O-depictives (2000: 251-2). Such derivational accounts are largely superfluous because world knowledge and contextual factors typically help to unambiguously identify a sentence as instantiating a SUBJECT-related DC or an OBJECT-related DC (Napoli 1989: 146). While pragmatic factors disambiguate the large majority of sentences (cf. *John ate the meat drunk* vs. *John ate the meat raw*), contextual factors usually single out one of the two potential readings in ambiguous cases (e.g. *The police arrested John drunk*).

[147] Along similar lines as the PASSIVE RESULTATIVE Construction (cf. footnote 123), it is also possible to interpret depictive sentences not as instances of a primitive DEPICTIVE Construction, but as combinations of two constructions, a DEPICTIVE Construction and some kind of force-dynamic ACTIVITY Construction. Again, the question of whether a particular type of sentence should be interpreted as an instance of a primitive construction type or as a combination of two constructions largely depends on the degree of its mental entrenchment. My characterisation of depictive sentences in this chapter does not hinge on either of the two possibilities, but is compatible with both. Note, however, that the DC cannot be freely combined with any force-dynamic construction; a combination of the DC and the TRANSFER Construction is, for example, not possible: **John gave the coffee hot to Mary* (ROS: 85); ??*John gave the coffee to Mary hot* (ROS: 58); **John gave Mary the coffee hot* (ROS: 77).

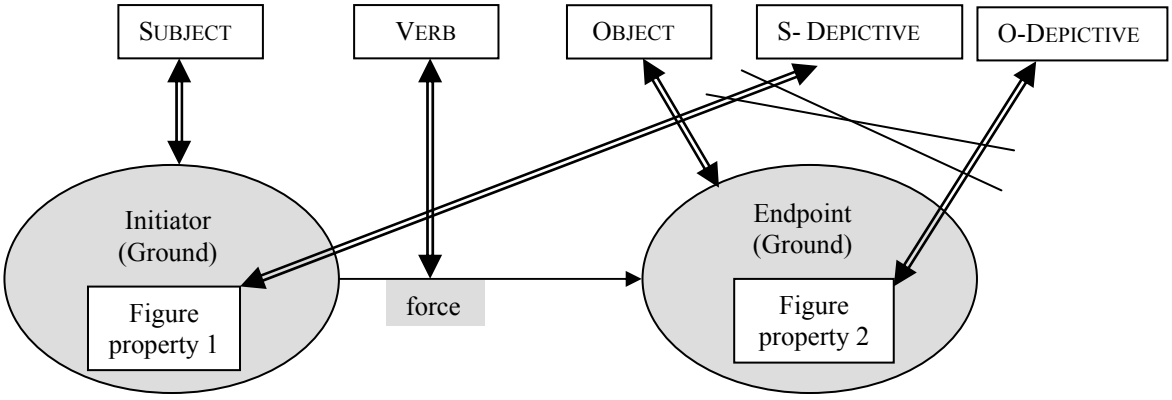
The DEPICTIVE XP is generally located at the very end of the construction: an S-depictive cannot be placed directly after the SUBJECT-entity it refers to (249a vs. a'); similarly, when the DC is elaborated by an adverbial, the adverbial typically precedes the DEPICTIVE phrase, as the evaluations of 30 informants demonstrate (249b vs. b'). Since the DEPICTIVE phrase serves as the figure element in the construction and is therefore the semantically most salient part of it, this alignment of the constructional slots is expected, given that the information focus is normally at the end of a sentence in English.[148]

(249) a. *John *undisturbed* wrote the dissertation.
a'. John wrote the dissertation *undisturbed*.
b. John wrote the dissertation *undisturbed* in his office. (9)
b'. John wrote the dissertation in his office *undisturbed*. (21)

A sentence does not usually tolerate more than one figure property. Examples illustrating a combination of an O-depictive and an S-depictive (250a), or a combination of two O-depictives (250b) or two S-depictives (250c) are infelicitous to varying degrees, even though they are sometimes quoted in the literature. As soon as there are two figure properties that refer to one or even two participants in the ground event, there is no longer an unambiguous focus in the sentence and the figure/ground relationship becomes difficult to process; the situation diagrammed in figure 14 for a sentence such as (250a) is consequently ruled out.[149]

(250) a. *John$_i$ ate the meat$_k$ *raw*$_k$ *naked*$_i$. (ROS: 100)
b. *He ate the meat *raw*, *red*. (ROS: 73)
c. ?John danced on the table *naked*, *drunk*. (ROS: 41)

Figure 14: Only one DEPICTIVE XP allowed in the DC



Furthermore, the figure/ground model requires a figure property to refer to only one participant in the ground event. This is the reason why the sentences in (251) are ungrammatical:

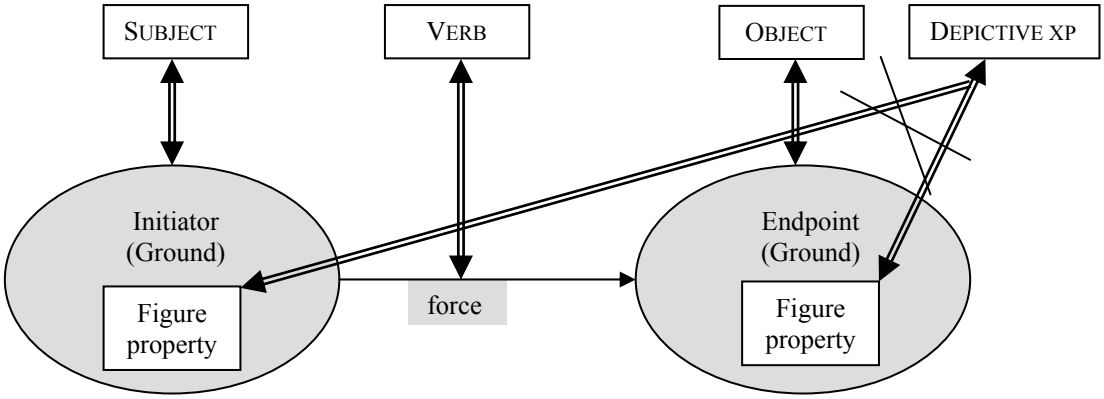
[148] In information-structure terms, the force-dynamic event is presupposed, while the figure property contains new information. Green showed that the sentence *Did the English burn Joan alive?* presupposes that the English did burn Joan; if such a presupposition is absent, the question becomes odd (cf. *Did the English burn Washington alive?*) (1970: 275).

[149] When the two DEPICTIVE phrases are coordinated and form a complex figure, the resulting sentence becomes acceptable, though: *He ate the meat* ***raw and red***; *John danced on the table* ***naked and drunk***. A complex figure is, of course, not possible for (250a): **John ate the meat raw and naked*.

adjectives such as *delicious* and *boring* do not characterise an entity *per se*, but express a relation between an entity and a person responding to this entity (see also 11.4.6.2). The configuration depicted in figure 15 is therefore as impossible as that in figure 14.

(251) a. *John drank the coffee *delicious*. (ROS: 100)
b. *Mary read the book *boring*. (ROS: 100)

Figure 15: DEPICTIVE XP must refer to only one participant



The following section will examine the deductive consequences of the conceptual model sketched in figure 13 by describing the associations between lexical items and the slots of the DC. While the logical representation in (248) describes the basic meaning of the DC quite well, it is not equipped to handle these more fine-grained conditions, which are a result of the force-dynamic and figure/ground relationships controlling the DC.

10.2 Conditions on the slots of the Depictive Construction

It has already been emphasised that the depictive figure refers to a force-dynamic ground event. The verbs that can be associated with the VERB-slot of the DC must consequently be compatible with the dynamism and asymmetry inherent in the force-dynamic configuration. Like the RC, the DC does not normally tolerate stative verbs (252) (cf. Demonte 1987: 5-7; Rapaport 1993: 172).

(252) a. *John loves Mary *happy*. (ROS: 100)
b. *John has two children *sad*. (ROS: 100)
c. *John lives in L.A. *bored*. (ROS: 85)

The reason why the ground event is typically dynamic resides in the characteristics of the figure/ground relationship. On the assumption that a sentence referring to a stative situation is invariable in the sense that it holds true at all instances of the situation, the DC could not single out a property that holds of a participant only temporarily because every property would characterise the participant in a permanent fashion. A permanent attribute is not informationally salient enough to serve as a figure property in the DC because it would, in a manner of speaking, merge into the ground event along with the participant. A sentence denoting a dy-

namic event such as *John drove the car*, on the other hand, can code temporally distinct instances of the event, so that John may be drunk at one instance and sober at another. A static relationship such as that described in (252b) is not compatible with the idea of temporally distinct instances; thus, when John's children are referred to as sad in (252b), they must be referred to as sad in all temporal instances of the situation described by the sentence, which is contrary to the requirement that a figure must temporarily stand out from the ground to capture our attention. A property that holds of an entity in a permanent fashion cannot therefore be expressed by a DEPICTIVE phrase, but requires different linguistic means such as, for example, an attributive adjective, which becomes part of the participant in the ground situation (*John has two **sad** children*).

Although the force-dynamic requirement for the ground event seems to be correct for a first pass, the OBJECT-related DEPICTIVE XPS with *like*-type verbs in (253a, a') and the SUBJECT-related phrases in categorical predications (253b, b') offer contradictory evidence because they relate to participants in stative situations.

(253) a. John likes his women *plump*. (from Green 1973: 267)
a'. "I think I prefer you *drunk*," Sandison said (BNC ASN: 2231).
b. Mary is attractive *nude*. (ROS: 25) (from Arimoto 1991: 108)
b'. Mary looks even more fantastic *naked*. (ROS: 15)

Given that these sentences are static, it stands to reason that the ground event need not necessarily express a force-dynamic relationship as long as it is compatible with the idea of variable instantiations. Sentence (253a) does not express an invariable relationship because the set of John's women may be different from instance to instance; the sentence therefore means that 'for every woman who is part of the potential set of John's women, the condition holds that this woman must be plump for John to like her'. A sentence such as **John loves his girlfriend plump* is ungrammatical, on the other hand, because it expresses an invariable situation: in contrast to *his women* in (253a), *his girlfriend* is a constant with a fixed reference. Similarly, the ground situation in (253b) can have various instances, and Mary is only attractive in those instances when she is nude. **Mary is attractive tall* excludes the possibility of different instances and is therefore ruled out. Compared to force-dynamic grounds, depictive sentences with stative grounds are clearly the exception. Such sentences are restricted to a small number of verbs (e.g. *like*, *prefer*, *be* and *look*), and these verbs only show very weak associations with the DC. Of 1,080 sentences extracted from the BNC that include the main verb *like*, for example, only a fraction of seven (0.6%) belongs to the DC. (254) gives two more examples of what could be called the CONDITIONAL DEPICTIVE Construction with *like* in the VERB-slot.

(254) a. I don't like it stone cold, I just like it nice, cos if it's too hot you can't taste it (BNC KB8: 6563).
b. He liked her in minuscule bikinis or high-cut swimming costumes (BNC FRS: 719).

Since the ground event and the figure property must be compatible with the idea of variable instantiations, the ground event is usually dynamic or 'conditional', and the figure typically denotes a temporary property. As has repeatedly been pointed out in the literature, the DEPICTIVE phrase must host a stage-level adjective, and not an individual-level adjective (255) (Rapoport 1993: 171-2).

(255) a. John wrote his dissertation *drunk*/ **intelligent*.
b. The maid mopped the floor *hungry*/ **friendly*. (from Randall 1983: 98)
c. The baker loaded the bread *fresh*/ **white*. (from Rapoport 1993: 171)

Only properties expressed by stage-level adjectives such as *drunk*, *hungry* or *fresh* are "escapable from" (Randall 1983: 98) and consequently need not be present at all instances of the ground event, while properties denoted by individual-level adjectives such as *intelligent*, *friendly* and *white* characterise their respective entities at all instances of an event. Individual-level properties are normally realised as attributive adjectives, which help to identify an entity by highlighting one of its permanent attributes (e.g. *The friendly maid mopped the floor*).

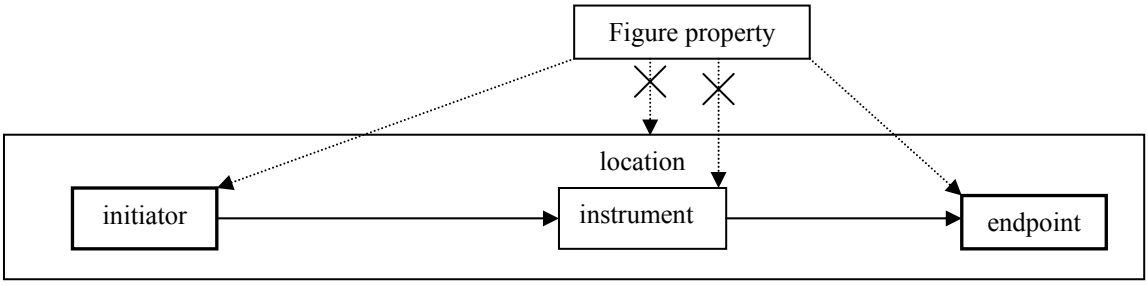
A rather technical explanation for the different acceptability of stage-level and individual-level adjectives in the DC has been submitted by Rapoport, who thinks that dynamic verbs exclusively license stage-level adjectives, which contain an e(vent)-place, whereas individual-level adjectives, which describe permanent properties, do not contain an e-place and can therefore not be licensed by a dynamic verb (1993: 173-5). This account can be placed on a cognitively more plausible footing when it is argued that the property must be temporary in order to apply to only a subset of the instances expressed by the dynamic event; a permanent property applies to all potential instances of an event and does not therefore have the salience required of a figure. This requirement can be illustrated with a perceptual analogue: when the electric lights on a Christmas tree come on and off because of a loose connection, they almost necessarily capture the viewer's attention because they temporarily stand out from the ground; when the electric lights burn continuously, however, they are more likely to merge with the ground and to become one of the permanent characteristics of the Christmas tree.

In a typical DC, a temporary property thus characterises a participant in a dynamic event. Not every participant in the event can serve as a reference point for the figure property, though; it is imperative that the participant is either the initiator or the endpoint in the event and not, for example, the instrument or location (256a, b).

(256) a. *Mary cut the meat with a knife *sharp*.
b. *Mary cut the meat in the kitchen *hot*.

The participants in an event are not all of the same standing. *Mary* and *the meat* are centrally involved in the cutting-activity described in (256a, b), which is not conceivable without an initiator and an endpoint. The instrument *a knife* and the location *the kitchen*, on the other hand, are more peripheral participants that merely elaborate the event: even when they are not overtly expressed, we know that a cutting-activity includes an instrument and takes place at some location; in many cases, these components of the semantic structure can therefore be left unspecified and interpreted freely. Instruments and locations elaborate ACTIVITY-Constructions, but they are not central enough conceptually to serve as reference points for a figure property. In other words, a DEPICTIVE phrase can only refer to those participants that are obligatorily profiled by the respective construction (figure 16).

Figure 16: Participants serving as reference points for the figure property in force-dynamic constructions



The initiator/endpoint-requirement is very strong. Even obligatory participants that have less salient functions in an event as goals in a TRANSFER Construction (257a, b) or topics in a communication event (257c) do not constitute felicitous reference points for DEPICTIVE phrases (Culicover and Wilkins 1986: 130).

(257) a. *Mary received the letter *nervous*. (ROS: 85)
b. *John gave Mary the letter *drunk*. (ROS: 80)
c. *The teacher talked about the boy *ashamed*. (ROS: 100)

While all kinds of initiators can be characterised by a figure property (258a, b), endpoints serving as reference points for DEPICTIVE XPS are typically restricted to a small number of event-types, such as those expressed by INCREMENTAL-THEME Constructions (258c, c'), ITERATIVE-ACTIVITY Constructions (258d), and TRANSFER Constructions (258e, e').

(258) a. The officers believe Elizabeth and Julie had been sunbathing *naked* on the remote beach, confident they would not be seen (BNC CBE: 1445).
b. [I]f the man had been lurking in disreputable quarters and lurching home *drunk*, it was his own fault (BNC A7A: 1064).
c. Should you eat it *raw* or *cooked*? (BNC CB8: 2773)
c'. How could he drink his tea *so hot*, so quickly? (BNC FRC: 833)
d. Charlie chewed the meat *raw*. (from Jackendoff 1990a: 226)
e. Sue handed him the towel *wet*. (from Goldberg 1991: 86)
e'. I am loath to take it back to SMAC where I bought it *new* (BNC AN2: 1715).

What is striking is that the sorts of events that are compatible with O-depictives are exactly those that do not tolerate resultative phrases: the force in an INCREMENTAL-THEME Construc-

tion 'passes through' the endpoint by increments, but does not change it in a specific property; the endpoint in an ITERATIVE-ACTIVITY Construction is repeatedly impinged upon by the force it receives, but is not changed along one of its property dimensions.[150] Similarly, the endpoint in a TRANSFER Construction is changed in its location as a whole, and is not affected in a particular property; this is also true of (258e') because "change in possession" is "a kind of change of location" (Tenny 1994: 92; see also Croft 1991: 206-7) with the qualification that "[p]ossession is a discontinuous 'space,' with no intermediate points between one possessor and another: something can be halfway between two spatial locations A and B, but something cannot be halfway between belonging to A and belonging to B" (Jackendoff 2002: 361). An O-depictive can therefore not characterise the endpoint in a resultative sentence (259), even though such examples are sometimes quoted in the literature.

(259) a. *Bill cooked the meat dry unsalted. (ROS: 77)
b. *We hammered the metal flat hot. (ROS: 87) (from Aarts 1992: 58)

The mutual exclusion of resultative phrases and O-depictives could be due to a clash of conceptualisations of the OBJECT-entity in the two constructions: in the RC, the endpoint is highlighted in one of its property dimensions, the current instantiation of which is changed by the force-transmission event (e.g. 'shape' in 259b); the figure property in the DC characterises the OBJECT as a whole, however, and not just the dimension evoked by the VERB and the RESULTATIVE phrase. Even when the endpoint is consumed as in *John ate the meat raw*, every increment of *the meat* is still meat and can be characterised by *raw*, but *hot* can only refer to *the metal* as a physical object and not to its shape-dimension in (259b).[151]

A DEPICTIVE phrase cannot just highlight any property of the initiator or endpoint in a force-dynamic event. While (260a, b) are acceptable instances of the DC, (260a') is odd and (260b') unacceptable.

(260) a. The waiter danced *naked*. (ROS: 0) (from Aarts 1995: 90)
a'. ?The waiter smiled *naked*. (ROS: 45) (from Aarts 1995: 90)

[150] The sentence *Mary chewed her knuckles raw* must be interpreted as an instance of the RC (Jackendoff 1990a: 226): the OBJECT-entity *her knuckles* is affected by the activity 'chew', with the result that they are raw at the end of the event. In (258d), *the meat* does not become raw as a consequence of the chewing-event, but *raw* is a characteristic of the meat during the event. Since *chew* can express different sorts of force transmission and highlight different aspects of its endpoint, it is compatible with both the RC and the DC (cf. also *John burned the steak black* vs. *They burned the witch alive*).

[151] This clash of OBJECT-conceptualisations also serves to answer Green's question why a sentence such as *Ruby shot Oswald dead* can only mean that Oswald came to be dead as a result of being shot, but not that Oswald was already dead when Ruby started to shoot at him. Green asserts that this is not a self-evident interpretation: "Could we not imagine that as they [some group of mystics; H.S.] develop an allegorical tradition, they may invent a story about a fallen angel whose crime was that 'he shot Oswald dead' meaning that he shot a bullet into the dead body of the man who was called Oswald? If not, can anyone say why not?" (1970: 275). It is, of course, possible to conceptualise the situation envisaged by Green, but the force conventionally associated with *shoot* highlights the endpoint as a living being that becomes dead as a result of the event. *Shoot* is therefore a verb that is only compatible with the RC, but not with the DC.

b. My daughter only eats the vegetables *cooked*. (ROS: 25)
b'. *My daughter only eats the vegetables *expensive*. (ROS: 100)
(from Demonte 1987: 7)

Demonte concludes from the infelicity of some DEPICTIVE XPs that they "appear to be in some sense selected by the main verb" (1987: 7), and Aarts maintains that there must be some sort of pragmatic compatibility between them and the verbal event (1995: 91). While a selection-account is contrary to the spirit of Construction grammar, Aarts' hypothesis can be fleshed out by the figure/ground model underlying the DC: a figure property may only characterise an entity in a way that can be construed as being relevant to the participation of the entity in the ground event. The activity *The waiter smiled* profiles the facial expression of the initiator, and no sensible relation can be construed between the waiter's facial expression and his nakedness (260a'); in (260a), on the other hand, the waiter is profiled as a moving figure in a dancing event, and the property *naked* may be conceived of as characterising the moving figure. Similarly, *eating*-activities highlight the endpoints as edible objects, so while *cooked* may be construed as relevant to such an activity, *expensive* cannot. The latter property may, however, serve as the figure in a TRANSFER Construction: *John bought the painting expensive*.

One last constraint on the figure property may be mentioned here. The DEPICTIVE phrase is typically a non-graded adjective (Aarts 1992: 63-4), so the sentences in (261) are unusual.

(261) a. *He ate the nuts *extremely salted*. (ROS: 86) (from Aarts 1992: 64)
b. *John ate the meat *as raw as Mary did*. (ROS: 81)
c. ??*How drunk* did John drive the car? (ROS: 61)

Figure properties that are absolute and not graded stand out more strongly from the ground, which can be seen as a linguistic analogue to the perceptual principle that a visual figure/ground configuration is more pronounced when "[t]he figure is harder, more strongly structured, and more impressive" (Koffka 1935: 189; see also Croft 2001: 332).

10.3 Mapping out the functional space of depictive and related constructions

10.3.1 Attributive and predicative constructions

The differences between the DC (262a) and sentences with attributive adjectives (262b) have already been hinted at in the preceding section.

(262) a. Bill drank the coffee *cold*.
b. Bill drank **the cold coffee**.

Aarts asserts that such sentence pairs "are close, but not identical, in meaning", paraphrasing (262a) with a temporal adverbial clause ('while it was cold') and (262b) with a non-restrictive relative clause ('which was cold') (1995: 77). Paraphrases must be handled with care because it can be misleading to explain one structure on the matrix of another; what Aarts' paraphrases

demonstrate, however, is that DEPICTIVE XPs indirectly refer to an event via one of its participants, while attributive adjectives "are part of the NP combining with N to form a Common Noun expression, and they are not temporally related to the matrix verb at all" (Rothstein 2000: 244). In other words, a DEPICTIVE phrase denotes a property that holds of a participant on a special occasion, while an attributive adjective characterises an entity in a permanent fashion — the entity does not even have to evince the quality at the particular instance referred to by the sentence (263a vs. b).

(263) a. *I met the man drunk again, but this time he was sober. (Rothstein 2000: 244)
b. I met the drunk man again, but this time he was sober. (Rothstein 2000: 244)

Bolinger has aptly described the typical function of attributive adjectives as "reference modification" (1967b: 14). Since reference modification serves to characterise an entity in a permanent fashion, only those adjectives and participles that denote a stable and salient property of the head noun can be used attributively (1967b: 7-12). Consequently, "if an adjective names a quality that is too fleeting to characterize anything" (1967b: 9), it is barred from attributive use (cf. **the ready man*, **withdrawn money* and **a mistake-erasing secretary*; Bolinger 1967b: 6, 9). Wierzbicka has argued cogently that reference modification enriches the conceptualisation of an entity by adding a permanent feature to "the image evoked by a noun" (1986: 374). An attributive adjective modifies the reference system of a noun and is therefore tightly bound up with our conceptualisation of the entity the noun refers to; *a crooked lawyer* means 'crooked qua lawyer', so ?*a crooked cousin* is odd because the concept of a cousin does not include the dimension of 'crookedness' (Bolinger 1967b: 22). An attributive adjective is thus "an intrinsic part of defining the reference of the entire NP" (Napoli 1989: 20). Croft calls the image evoked by a noun a "cognitive file" (1991: 118) and argues that "restrictive modification helps fix the identity of what one is talking about (reference) by narrowing the description" (1991: 52) (see also 11.4.6.2).

A predicative adjective (e.g. *The man is **asleep***) often does not add a permanent feature to the cognitive file of an entity, but rather "provides a secondary comment (predication) on the head that it modifies" (Croft 1991: 52), a function that Bolinger calls "referent modification" (1967b: 20). Referent modification provides new information on an entity, the validity of which is frequently restricted to a special occasion. The predication *The student is eager* does not necessarily mean that the student is eager qua student, but may also denote a student that is eager to go to the next seminar, for example, and *The cousin is crooked* does not normally modify the reference system of *cousin*, but more probably refers to the behaviour of the

cousin in a special situation (Bolinger 1967b: 21-2).[152] To reiterate, an attributive adjective typically evokes the noun as a class and adds a feature to the conceptualisation of this class, while a predicative adjective frequently refers to an individual representative of the class and designates a property of this individual on a particular occasion. The DEPICTIVE phrase is a prime example of a predicative adjective because it singles out a temporary quality of an entity at a specific instance. While an attributive adjective becomes part of the nominal reference system and therefore merges with its head noun into the clausal event, a DEPICTIVE adjective highlights a salient property of a noun on a specific occasion and stands in a figure/ground relationship with the noun and the event it belongs to.

10.3.2 Functional map of depictive figure/ground constructions

In contrast to the semantic difference between DEPICTIVE phrases and attributive adjectives, which is rather straightforward, the functional distinctions between the DC (264a) and other examples of referent-modification such as the NON-RESTRICTIVE RELATIVE CLAUSE Construction (264b), the DETACHED DEPICTIVE Construction (264c) and the *As*-DEPICTIVE Construction (264d) has not been described systematically yet (Schneider 1997: 41).

(264) a. The teacher taught the English lesson **drunk**.
b. The teacher, **who was drunk**, taught the English lesson.
c. **Drunk as a skunk**, the teacher taught the English lesson.
d. The teacher taught the English lesson **as a notorious drunkard**.

I will briefly characterise these constructions separately before I attempt to integrate them into a two-dimensional functional map. Each of these constructions constitutes a topic of interest in itself and will have to be treated much more intensively than can be done here.

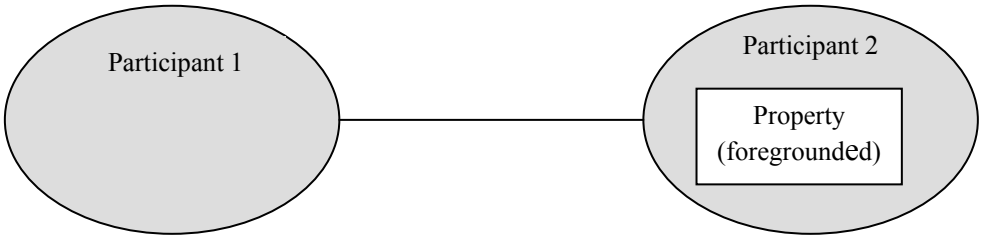
The conceptualisation behind depictive clauses and non-restrictive relative clauses differs along two dimensions: first, the property named by the DEPICTIVE phrase is foregrounded relative to the rest of the sentence, while the characteristic designated by the non-restrictive relative clause is backgrounded relative to a main-clause participant. Second, the reference point for a depictive property is a participant in the event and, indirectly, the event as well; the reference point for a non-restrictive relative clause, on the other hand, is only the entity that is more closely described by it. The adjective *drunk* in (264a) characterises the teacher and indirectly his participation in the ground event, whereas the non-restrictive relative clause in (264b) only gives additional information on the teacher. Since non-restrictive relative clauses

[152] The distinction between attributive and predicative adjectives is not absolute. Since predicative adjectives after *be* can also modify the reference system of the subject noun, Bolinger distinguishes between two kinds of *be* predications that he calls be_{temp} (e.g. *The girl is foolish*) and $be_{n\ temp}$ (e.g. *The girl was faint*) (1967b: 14). Similarly, attributive adjectives may denote a temporary quality of their head noun when the referent of the noun has already been established in discourse (Bolinger 1967b: 25).

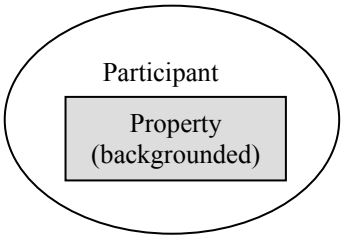
are not related to the main-clause event, they are much less constrained semantically than DEPICTIVE phrases. A DC such as **He ate the steak expensive* is odd because *expensive* does not characterise *the steak* with respect to its participation in the eating-event, while *He ate the steak*, *which had been expensive* is possible because the non-restrictive relative clause refers exclusively to its head noun without also implying a semantic relationship with the main-clause proposition. The conceptualisation behind the DC thus comprises the whole event that serves as the ground for the DEPICTIVE phrase (figure 17a), while the conceptualisation behind the NON-RESTRICTIVE RELATIVE CLAUSE Construction only includes the entity that is more closely described by the information backgrounded in the relative clause (figure 17b).

Figure 17: Comparison of the conceptualisations behind the DEPICTIVE Construction and the NON-RESTRICTIVE RELATIVE CLAUSE Construction

a. DEPICTIVE Construction



b. NON-RESTRICTIVE RELATIVE CLAUSE Construction



The DC and the NON-RESTRICTIVE RELATIVE CLAUSE Construction thus contrast along two parameters: the property in the former is foregrounded and refers to the event as a whole (via one of its participants), while the property in the latter is backgrounded and refers only to an entity, but not to the event that entity is part of. There is a construction, which I call the DETACHED DEPICTIVE Construction, that is similar to the DC in that it refers to a participant plus the event it takes part in, but is also parallel to the NON-RESTRICTIVE RELATIVE CLAUSE Construction in that the property it denotes is backgrounded. A DETACHED DEPICTIVE phrase is separated from the rest of the clause by comma-intonation and typically occupies the sentence-initial or sentence-final position (Biber *et al.* 1999: 136; Smith 1977: 332). Like ordinary depictive phrases, detached depictives are more felicitous when they do not simply add a characteristic to an entity, but when they characterise that entity with respect to its participation in the respective event (265).

(265) a. John started to smile, glad that Mary seemed to like him/ ??completely naked.
a'. Naked, Julia stretched under the sheet, stretched so hard she pulled her stomach muscles to their full length (BNC A0R: 5).
b. A hard-core minimalist/ ??Just 20 years old, John despised Construction grammar.
b'. Just 20 years old, John published his first monograph.
c. An excellent actor/ ??Married with two children, John performed on Broadway.
c'. Married with two children, John regularly visited young actresses.

Non-restrictive relative clauses are not subject to this restriction: *John, who was naked, started to smile*; *John, who was just 20 years old, despised Construction grammar*; *John, who was married with two children, performed on Broadway*. Not surprisingly therefore, the relationship of detached depictives with the rest of the sentence is often characterised as adverbial, like that between the DEPICTIVE phrase and the event in the DC (e.g. Biber *et al.* 1999: 137; Quirk 1972: 256-7; 760-4). The main difference between the DC and the DETACHED DEPICTIVE Construction is that the latter puts the characteristics of an entity into the background like a non-restrictive relative clause (figure 18). When the detached predicative is placed at the beginning of the sentence, it serves as a kind of frame for the rest of the clause, while its function resembles that of an afterthought in sentence-final position (*An excellent actor, John performed on Broadway* vs. *John performed on Broadway, an excellent actor*).

Figure 18: Conceptualisation behind the DETACHED DEPICTIVE Construction

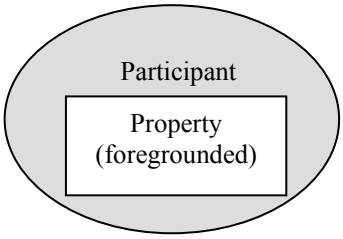
There is one construction that our discussion has bypassed so far, namely the *As*-DEPICTIVE Construction. In contrast to bare depictive phrases, *as*-depictives are invariably realised by NPs and never by APs; moreover, they can refer to almost any entity in the clause, not just to the initiator or the endpoint, as is evidenced by the examples in (266) (Schneider 1997: 37).

(266) a. The president gave a speech *as the head of state*.
b. John ate a steak *as his favourite kind of meal*.
c. John gave Mary a kiss *as his favourite girlfriend*.
d. The accident happened to her *as a young woman*.
e. We always visit her in summer *as the best time of year*.

The fact that *as*-depictives can also clearly occur as nominal postmodifiers (e.g. *Mary's job as a teacher of teenagers is very hard*) stands as an argument in favour of analysing *as*-depictives as NP-postmodifiers in general: "the *as*-string depends syntactically not upon the main clause predicate but solely upon a single NP" (Schneider 1997: 37). Unlike a bare depictive XP, an *as*-depictive refers only to an entity in the clause, and not to also to the event the entity participates in; as a consequence, *as*-depictives are not nearly as constrained as bare

depictives or detached depictives. Semantically, an *as*-depictive "introduces a distinction into sub-categories to what before seemed to be a notionally holistic entity" (Schneider 1997: 37), i.e. it highlights one specific facet of a multidimensional entity. As opposed to a non-restrictive relative clause (cf. figure 17b), the property (or, more precisely, the role/function) that has been singled out serves as a figure relative to the entity characterised (figure 19).

Figure 19: Conceptualisation behind the *As*-depictive Construction



It remains to be explained why the *as*-depictive is not, like a non-restrictive relative clause, normally placed immediately after the NP it modifies, but usually occupies the sentence-final position. For Aarts, the fact that most *as*-depictives cannot be felicitously placed directly after their head nouns (e.g. ***John gave Mary as his favourite girlfriend a kiss*) constitutes an argument against their analysis as NP-postmodifiers (1992: 119). This objection is uninformed, though. In Construction grammar, the term 'discontinuous constituent' refers to a situation in which a syntactic component is separated from the phrase it is semantically related to for reasons of information structure (cf. the examples in 267) (Croft 2001: 187). In the *As*-DEPICTIVE Construction, the *as*-phrase serves as the informationally salient figure and is therefore aptly placed at the very end of the construction.

(267) a. **A guy** came in **who I hadn't seen since high school**. (from Croft 2001: 191)
b. **A picture** is hanging on the wall **of a famous movie actor**.
(from Jackendoff 2002: 147)

Table 13 is a first approximation of the functional map formed by the semantically related constructions that have been discussed in this chapter. These constructions differ along two dimensions: first, whether the depictive property (in the widest sense of the term) is foregrounded (indicated by bold type) or backgrounded (indicated by shading); and second, whether the property refers only to an entity in the event (indicated by bold underlining) or to an entity plus its participation in the event (indicated by normal underlining).

Just to make the picture complete, there are also depictive phrases that do not characterise a participant but refer directly to an event. The ABSOLUTE DEPICTIVE Construction contains a subject/predicate relationship that is backgrounded relative to the rest of the event (cf. Biber *et al.* 1999: 137; Hantson 1989: 214-5; Napoli 1989: 125-7). In the large majority of cases, this construction is introduced by *with* (268).

(268) a. With John helping me I shall succeed. (from Hantson 1989: 215)
b. With football on TV, there is hardly anyone at school. (from Hoekstra 1992: 146)
c. With the bus drivers on strike, we'll have to ride our bicycles. (from Napoli 1989: 125)

Finally, some *As*-DEPICTIVE phrases refer to a ground event as a whole, and not to a participant in this event (269). I will call this rare pattern PROPOSITIONAL *As*-DEPICTIVE Construction to distinguish it from the prototypical NP-postmodifying *As*-DEPICTIVE Construction.

(269) a. I don't walk my children home from school as a responsibility, but as a treat. (from Napoli 1989: 159)
b. John sells cars as a profession.

Table 13: Functional map of depictive figure/ground constructions

	property foregrounded	**property backgrounded**
reference point for property: **participant**	*AS*-DEPICTIVE Construction John returned home **as a rich man**.	NON-RESTRICTIVE RELATIVE CLAUSE Construction John, who was a rich man, returned home.
reference point for property: **participant plus event**	BARE DEPICTIVE Construction John ate the meat **drunk**.	DETACHED DEPICTIVE Construction Glad that Mary seemed to like him, John started to smile.
reference point for property: **event**	PROPOSITIONAL *AS*-DEPICTIVE Constr. John sells cars **as a profession**.	ABSOLUTE DEPICTIVE Construction With John helping me, I will succeed.

The two-dimensional functional space illustrated in table 13 is only a first step towards gaining a deeper understanding of the family of depictive constructions, and the predictions it makes will have to be matched against additional data by future research.

11. A mental-space account of the Qualifying Construction

11.1 The Qualifying Construction and functionally related patterns

The third secondary-predicate construction to be looked at differs markedly from the RESULTATIVE and DEPICTIVE Constructions. While those two constructions typically code force-dynamic events (270a), the QUALIFYING Construction (QC) denotes a stative mental relationship between a SUBJECT-entity and an OBJECT-entity (270a'). In contrast to the dynamism and asymmetry inherent in force-dynamic events, states do not have a clear starting-point or end-point; moreover, since they do not code change, they present a situation as stable through time, i.e. as exhibiting no internal temporal structure (cf. Newman 1982: 155; Schopf 1976: 8-9).[153] Only resultative and depictive sentences, which contain a volitional force-transmitter, are found in *wh*-clefts (270b), can occur in the imperative mood (270c), and may serve as complements of a main verb such as *promise* (270d); a qualifying sentence, on the other hand, is incompatible with the dynamic predicate *do* (270b') and the volitionality implied by the imperative mood (270c') or the predicate *promise* (270d') (cf. Hoekstra 1992: 158; Parsons 1990: 37; Saeed 1997: 109). Furthermore, only resultative and depictive sentences have an extension in time that can be brought into relief by the progressive aspect (270e), whereas extension is an irrelevant dimension for qualifying sentences, which therefore do not normally tolerate the progressive (270e').[154]

(270) a. The waitress wiped the table clean./ Mary ate the soup hot.
a'. John considers Mary intelligent.
b. What the waitress did was wipe the table clean./ What Mary did was eat the soup hot.
b'. ??What John did was consider Mary intelligent. (ROS: 65)
c. Wipe the table clean!/ Eat the soup hot!
c'. ?Consider Mary intelligent! (ROS: 46)
d. The waitress promised to wipe the table clean./ Mary promised to eat the soup hot.
d'. *John promised to consider Mary intelligent. (ROS: 77)

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[153] Stative constructions must be distinguished from patterns that express two-way causal relations between an experiencer and a stimulus (cf. 9.2.1). Sentences such as *John knows English* or *John considers Mary intelligent* make a statement about "all temporal slices of the individual that they are predicated of" (Hoekstra 1992: 159), while *John saw Mary* or *John remembered the answer* predicate something of "only a segment, or stage of the individual" (Hoekstra 1992: 158).

[154] Again, it is not the verb that is stative, but the construction it appears in. *Consider* is also compatible with the MENTAL ACTIVITY Construction:

a. Over the past couple of years, Waverley Borough Council have been considering a number of plans to redevelop the area (BNC BM4: 2616).
b. The less the capacity to learn and consider, the greater is the habit instinctive (BNC BMY: 485).

The MENTAL ACTIVITY Construction shows the typical force-dynamic characteristics: *What they did was consider the plan seriously./ Please consider this plan!/ They promised to consider the plan./ They were considering the plan.*

e. The waitress was wiping the table clean./ Mary was eating the soup hot.
e'. ??John is considering Mary a fool. (ROS: 65)

The SUBJECT of the QUALIFYING Construction is not a volitional initiator, nor is the OBJECT an endpoint that is changed in the course of the event. Nevertheless, there have been attempts to accommodate qualifying sentences more closely to force-dynamic secondary-predicate constructions. Verspoor has argued that a qualifying sentence codes a mental force-dynamic event: "In the case of *wipe* the causation is physical and concrete and in the case of *consider* the causation is mental and abstract" (1997: 434). In a sentence such as *John considers Mary intelligent*, his view goes, the SUBJECT *John* mentally moves the OBJECT *Mary* into the category *intelligent* (1997: 448). From a Construction-grammar perspective, there is no need to relate formally similar sentences to a common semantic core when this is semantically far-fetched: qualifying sentences denote permanent mental states, and although a categorising act may have preceded John's subjective assessment of Mary as intelligent, this is not part of the meaning of the sentence *John considers Mary intelligent*.[155] RESULTATIVE and QUALIFYING Constructions constitute distinct pairings of form and meaning and thus need not be treated together functionally — the opportunity to describe every construction in its own terms is, in fact, one of the great advantages of Construction grammar over discrete accounts, which force similar kinds of complex-transitive, small-clause, complex-predicate or Predication-theory analysis on semantically different secondary-predicate constructions.

The meaning of the QC is quite abstract and much more difficult to pin down than that of force-dynamic secondary-predicate constructions. To gain a deeper understanding of the semantic relationships underlying a sentence such as (271a), I will attempt to calibrate its meaning in comparison to functionally related patterns: a *consider*-type mental verb can also be followed by a *that*-clause (271b), a non-finite clause (272c), or the NP *as* XP-pattern (272d) (Schneider 1997: 40). For expository convenience, I subsume these four constructions under the term 'qualifying patterns'.

(271) a. John considers **Mary intelligent**.
b. John thinks **that Mary is intelligent**.
c. John believes **Mary to be intelligent**.
d. John regards **Mary as intelligent**.

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[155] There is a type of sentence including *consider* that typically occurs in the imperative mood (a-c). I do not analyse these examples as instances of the QUALIFYING Construction, but as resultative sentences in which the SUBJECT-entity has some authority over a situation and uses an imperative speech-act to force his or her judgement of a situation onto the interlocutor. These sentences can indeed be regarded as expressing a kind of mental force in Verspoor's sense, but my assessment is that they are more similar to social resultative sentences such as *I declare the meeting finished* (cf. 9.2.3) than to qualifying sentences such as *John considers Mary intelligent*.

a. [C]onsider our friendship void! (BNC AD9: 3157)
b. Let us consider ourselves engaged; I will marry no one else, I promise (BNC CD2: 1259).
c. "[C]onsider me gone," said Scarlet, but she didn't go (BNC G1D: 2334).

The relatedness of these four qualifying patterns is also acknowledged in generative and descriptive accounts. As has already been laid out (cf. 5.1), generative grammarians assert that *consider*-type verbs assign an identical propositional θ-role to their postverbal complement, no matter how it is realised formally (Hoekstra 1988: 115). The problem with this view is that the patterns in (271) do not only differ in form, but are, as we will see, semantically distinct as well. Such semantic differences are usually downplayed in generative analyses: dealing with the related structures *saddle* NP and *put a saddle on* NP, Hale and Keyser maintain that these two structures can be assumed to be semantically equivalent from a grammatical point of view and that a possible semantic difference between them "is not, strictly speaking, linguistic knowledge" (1991: 122), i.e. it is "not the grammarian's problem; rather, it belongs to the cultural encyclopedia" (1991: 119). This syntactocentric view is rejected by construction grammarians, who treat syntax and semantics as an interrelated symbolic whole and therefore cannot close their minds to even very subtle semantic differences. As Langacker stresses, "semantic nuances [...] cannot be safely ignored in grammatical analysis — in fact, they are the very essence of grammar" (1999a: 338).

Although descriptive grammars do not work with underlying structures and derivations, their account of the patterns in (271) is equally deficient. Instead of scrutinising the semantic import of each of these patterns, they usually put them into distinct categories and subclassify them according to a number of formal criteria, such as whether the secondary predicate can be realised by an NP or an AP (e.g. Quirk 1985: 1196-1204). This purely descriptive classification misses important generalisations, though. Many verbs allow both NPs and APs to realise their secondary predicates and must thus be listed in two different groups; furthermore, verbs that are found with more than one of the structural patterns in (271) are spread over several classes as well. While generative accounts tend to concentrate too narrowly on the common aspects of these patterns, descriptive grammars are liable to split them into far too many formal subclasses. Both approaches lack explanatory power in the end.

To break the logjam posed by most current analyses of qualifying constructions we must try to bring as much empirical evidence to bear on the patterns in (271) as we possibly can. The first task is to find out which mental verbs are commonly associated with each of these patterns, and to determine the strength of association between individual verbs and patterns in quantitative terms (Schneider 1997: 41). Table 14 presents the results of an extensive BNC-based study for 15 fairly frequent mental verbs.

Table 14: Associations between mental verbs and functionally related qualifying constructions

	***that*-clause**	**NP inf XP**	**NP XP**	**NP *as* XP**	***n*[156]**
know	2,632 **93.6%**	178 **6.3%**	3 **0.1%**	—	2,813
assume	4,046 **89.3%**	454 **10%**	17 **0.4%**	14 **0.3%**	4,531
believe	4,431 **85%**	712 **13.7%**	67 **1.3%**	—	5,210
presume	575 **76%**	163 **21.5%**	19 **2.5%**	—	757
reckon	2,790 **93.6%**	133 **4.5%**	44 **1.5%**	15 **0.5%**	2,982
think	4,370 **92.2%**	128 **2.7%**	242 **5.1%**	1 **0.02%**	4,741
fancy	136 **61.8%**	19 **8.6%**	20 **9.1%**	45 **20.5%**	220
deem	25 **2.3%**	624 **57.7%**	418 **38.7%**	14 **1.3%**	1,081
judge	230 **29.3%**	283 **36.1%**	198 **25.2%**	74 **9.4%**	785
consider	571 **26.1%**	549 **25.1%**	882 **40.3%**	188 **8.6%**	2,190
find	564 **34.5%**	60 **3.7%**	1,009 **61.8%**	—	1,633
count	—	—	132 **41.4%**	187 **58.6%**	319
regard	1 **0.03%**	12 **0.3%**	19 **0.5%**	3,948 **99.2%**	3,980
think of	—	—	1 **1%**	95 **99%**	96
view	—	2 **0.2%**	2 **0.2%**	1,261 **99.7%**	1,265

[156] The absolute numbers depend on how often an individual verb has turned up in the relevant constructions in a sample of up to 6,000 sentences extracted for each individual verb from the BNC. The result is rather meagre for verbs such as *count* or *fancy*, which are prototypically followed by plain NPs, and more extensive for verbs such as *believe* or *regard*, which typically occur with *that*-clauses and the NP *as* XP-pattern, respectively. The percentages given are thus more representative for verbs that frequently occur in qualifying patterns than for those that are rarely found in these patterns.

The verbs that are located close to the top of this table occur prototypically with *that*-clauses; verbs in the middle of the table are most frequently found in the NP *to be* XP and NP XP-patterns, while verbs towards the bottom of the table are typically associated with NP *as* XP. The picture becomes even clearer when we put aside *that*-clauses for the time being: it is possible to set up four groups of verbs depending on which of the three non-finite/verbless qualifying structures — NP inf XP, NP XP and NP *as* XP — they are primarily associated with. The first group of verbs occurs prototypically with the non-finite pattern (NP inf XP), rarely with the NP XP-structure, and is practically never found with NP *as* XP (table 15). For a second group of verbs, the numerical difference between NP inf XP and NP XP is less pronounced, and these verbs are also marginally compatible with the NP *as* XP-structure (table 16). The cutting point between tables 15 and 16 is arbitrary, and the two groups may also profitably be considered as forming a continuum. Table 17 includes only a single verb, *find*, which is the only relatively frequent English verb that is almost invariably associated with NP XP. Finally, table 18 comprises verbs that are prototypically or almost exclusively found with NP *as* XP[157], rarely with NP XP, and almost never with NP inf XP.[158]

Table 15: Group I: prototypical association with NP inf XP

	NP inf XP	**NP XP**	**NP *as* XP**	***n***
know	178 **98.3%**	3 **1.7%**	—	181
assume	454 **93.6%**	17 **3.5%**	14 **2.9%**	485
believe	712 **91.4%**	67 **8.6%**	—	779
presume	163 **89.6%**	19 **10.4%**	—	182

[157] The alternative to NP *as* XP, NP *for* XP, is very rare in present-day English. There is only one verb, *take*, that is still commonly combined with both patterns (cf. a, b). The *for*-pattern is typically found in contexts that emphasise the invalidity of the judgement expressed.

a. "Good," Belinda nodded, taking it **as a polite enquiry** that didn't require a detailed response (BNC H9H: 882).
b. A stranger would have taken them **for brothers** (B1X: 1997).

[158] The less frequent patterns for each of the four groups are not usually mentioned in grammars and dictionaries of English; this applies to the NP XP-variant for group I, the NP *as* XP-pattern for group II, NP inf XP for *find* and NP inf XP and NP XP for verbs of group IV (see, for example, Huddleston and Pullum 2002: 265 and the entries for *believe*, *judge*, *find* and *regard* in Close 1975: 210-9).

Table 16: Group II: more balanced association with NP inf XP and NP XP

	NP inf XP	**NP XP**	**NP *as* XP**	***n***
reckon	133 **69.3%**	44 **22.9%**	15 **7.8%**	192
deem	624 **59.1%**	418 **39.6%**	14 **1.3%**	1,056
judge	283 **51%**	198 **35.7%**	74 **13.3%**	555
consider	549 **33.9%**	882 **54.5%**	188 **11.6%**	1,619
think	128 **34.5%**	242 **65.2%**	1 **0.3%**	371

Table 17: Group III: prototypical association with NP XP

	NP inf XP	**NP XP**	**NP *as* XP**	***n***
find	60 **5.6%**	1,009 **94.4%**	—	1,069

Table 18: Group IV: prototypical association with NP *as* XP

	NP inf XP	**NP XP**	**NP *as* XP**	***n***
fancy	19 **22.6%**	20 **23.8%**	45 **53.6%**	84
count	—	132 **41.4%**	187 **58.6%**	319
regard	12 **0.3%**	19 **0.5%**	3,948 **99.2%**	3,979
think of	—	1 **1%**	95 **99%**	96
view	2 **0.2%**	2 **0.2%**	1,261 **99.7%**	1,265

When we compare tables 15-18 to table 14, the following picture emerges: while *that*-clauses are the prototypical pattern for those verbs that prefer NP inf XP to the two verbless qualifying structures (verbs of group I and *reckon*), they are very rare or non-existant with verbs that are

prototypically associated with NP *as* XP (verbs of group IV with the exception of *fancy*).[159] Verbs in the middle of the continuum, which are typically followed by NP inf XP or NP XP, do not behave uniformly: while some occur with *that*-clauses only marginally (*deem*), others allow *that*-clauses to a considerable degree (*judge*, *consider*, *find*), while for still others it is the prototypical pattern (*think*).

The question that needs to be pondered is why individual verbs differ qualitatively and quantitatively in their associations with the four functionally related qualifying patterns. Two potential answers can be safely excluded from the beginning: first, from a Construction-grammar perspective, these structures cannot be assumed to be in free variation. The Principle of No Synonymy (cf. 8.2.2) states that differences in syntactic form invariably spell differences in meaning. The semantic basis of different complementation patterns has been repeatedly emphasised (Ransom 1986: 5-6; Wierzbicka 1988: 25); functionally related complementation patterns "instantiate separate and parallel constructions, each representing its own way of construing and symbolizing situations" (Langacker 1999a: 339), and each having "a meaning — and range of use — relative to the other choices from the system" (Dixon 1991: 215; see also Dixon 1995: 175).[160] Second, while it is not impossible that some of the verbs are idiosyncratically related to one pattern or another, the fact that groups of verbs show strikingly similar associations with the qualifying constructions indicates that idiosyncrasy cannot be a major factor. Rather, it must be assumed that the degree of association between a verb and a construction depends on the degree of semantic compatibility between the lexical item and the construction (cf. Dixon 1991: 207). We must consequently attempt to pin down the semantic/pragmatic factors that govern the distribution of finite *that*-clauses, NP inf XP, NP XP and NP *as* XP with individual verbs. This is a tricky business because the use of the wrong factors may preclude the statement of the right generalisations about the verb-construction associations.

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[159] I found only one example with *regard* followed by a *that*-clause in my BNC sample:

> It is generally regarded that liquidity is a very important factor in the management of unit trusts (BNC K8W: 38).

[160] This functionalist principle has not gone unchallenged. Noël doubts that there is, for example, a semantic difference between *x believes that...* and *x believes y to be...* because "both constructions are used to express opinions" (1997: 274), and he criticises the suggestions that have been made so far because "they are the outcome of reflection on a limited number of invented examples" (1997: 273). I attempt to show that 'expressing an opinion' is only a very coarse semantic characterisation of the situation and that we must probe much more deeply into semantic/pragmatic nuances; moreover, while invented examples remain an indispensable tool to extract subtle semantic distinctions, a whole range of other empirical data can be used to uncover semantic differences between the patterns studied here.

11.2 Semantic differences between groups of mental verbs

Drawing on proposals that have been made on this topic so far, this section looks at semantic differences between the four groups of mental verbs (cf. tables 15-18) and informally scrutinises how and why they differ in their associations with the four qualifying patterns. The following section (11.3) will put this informal sketch of semantic factors on a more formal footing.

11.2.1 Group I: prototypical association with *that*-clauses and NP inf XP

The first group of mental verbs, which can be exemplified by *know* and *believe*, is prototypically followed by *that*-clauses; of the other qualifying patterns, only the NP inf XP-variant is reasonably common, while NP XP is rarely, and NP *as* XP practically never found with these verbs. *That*-clauses after verbs like *know* and *believe* refer to "information that is concerned with knowledge about the world" (Ransom 1986: 31). *Know* communicates the sense that the main-clause SUBJECT takes the information contained in the *that*-clause as an indisputable, and therefore intersubjectively valid fact. *Believe* also refers to knowledge, but while *know* makes clear that the SUBJECT is convinced of the truth of the *that*-clause proposition, *believe* indicates that the SUBJECT is not completely sure about the validity of his or her knowledge (Ransom 1986: 32; Wierzbicka 1988: 134). Personally, however, the SUBJECT accepts the proposition as true, and has usually arrived at this opinion after careful and serious deliberation (Schneider 1988b: 301). Typically, a *that*-clause after *believe* therefore contains a unit of information for which the SUBJECT lacks some final piece of evidence that could help turn the belief into knowledge.

When *know* is followed by the infinitival pattern, the sentence "serves to express a combination of knowledge and subjective judgement, rather than plain knowledge" (Mair 1990: 200). Subjective judgement and knowledge are compatible when the sentence communicates the sense that what is attributed of the referent of NP_2, which I will refer to as the TOPIC of the SUBJECT's opinion, is derived from the SUBJECT's direct, possibly personal experience with it (Duffley 1992: 55-6; Riddle 1975: 471-2). In other words, the SUBJECT must 'know' the TOPIC, because what is predicated of the TOPIC "is a function of this experience" (Postal 1974: 357), otherwise the NP inf XP-structure becomes less felicitous (Borkin 1984: 90; Steever 1977: 594-5). (272) contains some examples at stake: (272a) is better than (272a') because only Colin Powell, and not John's wife, knows George W. Bush personally. The sentence pair in (272b, b') also nicely illustrates the required relationship between the SUBJECT and the TOPIC in an NP inf XP-pattern: a scientist has usually had extensive experience with his theory,

while the students only possess second-hand knowledge of a physics theory; as a consequence, (272b) is fine while (272b') is odd.

(272) a. **Colin Powell** knows **George W. Bush** to be very honest in private conversations. (ROS: 10)
a'. ?From what she reads in the papers, **John's wife** knows **George W. Bush** to be very honest in private conversations. (ROS: 35)
b. **The scientist** knew **his theory** to be true but was unable to prove it yet. (ROS: 15)
b'. ?After our physics teacher had explained the theory to us, **we** all knew **it** to be true. (ROS: 32)

The 30 active sentences in which *know* is followed by the NP inf XP-pattern in my BNC sample typically suggest an experiential relationship between the SUBJECT and the TOPIC. 8 sentences communicate information that the SUBJECT has about himself or herself, i.e. NP_2 is realised by a reflexive pronoun here (273a, a'); in 7 examples, the SUBJECT makes a judgement about a person or animal he or she knows well (273b, b'); the remaining 15 sentences express judgements on concrete or abstract entities the SUBJECT is familiar with (273c, c').

(273) a. **He** was drunk with a new importance, knowing **himself** to be irreplaceably useful (BNC H7H: 1943).
a'. And, through her understanding, **she** knows **herself** to be utterly and completely alone (BNC CCN: 1467).
b. Oh, crumbs, **Leith** thought, and, while knowing **Rosemary** to be a highly intelligent girl, had a most worrying feeling that ... (BNC JY1: 1709).
b'. "They are a breed that will enjoy a long walk and they are excellent car travellers — in the 34 years that I have owned them **I** have never known **one** to be car sick," she added (BNC ACM: 1399).
c. [K]nowing **this** to be his likely mood when **I** brought in the tea yesterday afternoon, … it would certainly have been wiser not to have mentioned Miss Kenton at all (BNC AR3: 114).
c'. No matter how much writers protest, non-writers seem to like the idea that writing is easy, not the arduous manual, emotional and intellectual labour **writers** know **it** to be (BNC CG3: 10).

Similarly, the 276 active sentences with *believe* in the NP inf XP-pattern are found in contexts that indicate some sort of experience between the SUBJECT and the TOPIC. This can again be supported with examples: 32 sentences express the SUBJECT's belief about himself or herself (274a, a'), 67 instances a belief about another person (274b, b'), and 177 sentences a belief about some entity that the SUBJECT has had extensive experience with — frequently in a scientific or religious context (274c, c').

(274) a. Sally-Ann, unlike Rosemary, finds it a struggle ... to dredge up her dreadful past — like Rosemary **she** has believed **herself** to be a doormat in society (BNC B03: 1482).
a'. "Dauntless is **a paladin**," Cleo reminded her, "and therefore believes **himself** to be pious and true" (BNC GW2: 3190).
b. Clara, already familiar with children of famous parents, and with **children** who believed **their parents** to be famous … (BNC EFP: 889).
b'. [S]o many of her contemporaries believed Margery to be mentally ill; only, probably, **the superstitious, the credulous and the ignorant** believed **her** to be a genuine mystic (BNC CFX: 801).
c. **US linguists Sapir and Whorf** who investigated the Hopi Indian language in the 1930s believed **it** to be so distinctive as to represent an entirely different thought process (BNC HH3: 7453).

c'. If one is **a fundamentalist Christian** who believes **the text** to be inspired, then one sees why the text is alone to be interpreted in terms of the text (BNC EF0: 640).

Since the knowledge or belief expressed by the NP inf XP-pattern must be based on the SUBJECT's personal experience with the TOPIC, the sentence should not contain factual information that is publicly known and is true independent of any subjective experience (275a, b), but knowledge or belief that is based on personal experience and judgement (275c, d) (Wierzbicka 1988: 50). Empirically verifiable facts, which are "true or false quite independently of human values or judgements " (Borkin 1984: 55), are more felicitous in a *that*-clause (275e, f).

(275) a. ?I know Lisbon to be the capital of Portugal. (from Wierzbicka 1988: 50)
b. ?I believe the square root of one-hundred and twenty-one to be eleven. (from Mair 1993: 7)
c. And how can a farm worker strike against an employer **whom he knows to be** ... **a solicitous and considerate person**, even if he pays low wages? (BNC FPR: 324).
d. The relationship of television to newspapers is an extremely close one, but it is one which people in television refuse to acknowledge, largely because **they believe their product to be morally superior** (BNC CEK: 2923).
e. Their rapacious habits have been the subject of bloody hyperbole in films and bestsellers, so **everybody knows that the shark has ranks of fearsome, pointed teeth** (BNC AMM: 1153).
f. Is it possible that the organizers had misread the calendar, **believing that Saturday was the first of April, not the third**? (BNC EAK: 61).

This is a crucial distinction that can also be brought out in evaluation tests. The NP inf XP-pattern is typically used when "the truth of a proposition is not absolute but depends on one's view of things" (Borkin 1984: 55). For this reason, sentences (276a, b, c) are odd because the infinitival patterns express objective, empirically verifiable assessments; the primed sentences, on the other hand, are fine because the SUBJECT attributes a quality to the TOPIC that is based on personal experience and subjective judgement. Objective propositions are again more natural in *that*-clauses: *I know/believe that John is a teacher/that my brother is a Protestant/that seven is a prime number*.

(276) a. ?I know John to be **a teacher**. (ROS: 45)
a'. As his colleague, I know John to be **a very competent teacher**. (ROS: 11)
b. ?I believe my brother to be **a Protestant**. (ROS: 42)
b'. As a devout Catholic, I believe my brother to be **an immoral person**. (ROS: 23)
c. ?I believe seven to be **a prime number**. (ROS: 35)
c'. I believe seven to be **a lucky number**. (ROS: 20).

The requirement that the sentences in the NP inf XP-pattern after *know* and *believe* need to express subjective judgements is not tantamount to saying that the judgements merely depend on the SUBJECT's idiosyncratic view of things; rather, the SUBJECT assumes that anyone who had the same personal experience with the TOPIC would arrive at similar conclusions.

A corollary of the constraint that the quality attributed to the TOPIC must be based on personal experience and subjective judgement is the requirement that the sentence must express a

permanent quality, and not a temporary state of affairs (277a, b vs. a', b') (Borkin 1984: 58). The assessment of temporary attributes does not depend on a long-standing personal experience with the TOPIC and is therefore typically put into a *that*-clause (277c, d).[161]

(277) a. I know John to be **a very competent teacher**. (ROS: 11)
a'. ?I know John to be **very nervous** these days. (ROS: 40)
b. Mrs Thatcher was apparently informed of the French decision ... and it may well have encouraged her to believe **that Britain's European partners are now ready** to take the difficult decisions which are a prelude to monetary union (BNC A9W: 17).
b'. ??The Prime Minister believes **Britain's European partners to be now ready** to take the difficult decisions which prelude the monetary union. (ROS: 54)
c. If the pain becomes acute, the cat knows **that it is in great danger** (BNC BMG: 769).
d. I was depressed, and when they arrived at my house and said, "We're very sorry to hear about your husband", I believed **they were genuine** (BNC AJY: 1209).

The rare NP XP-structure after *believe* shares most of its characteristics with the NP inf XP-pattern: the assessment must be based on personal experience and must express a subjective judgement on a permanent characteristic of the TOPIC. In contrast to sentences with NP inf XP, however, the SUBJECT is less convinced about the possible intersubjective validity of his judgement. In other words, while the SUBJECT in the NP inf XP-pattern is convinced that anyone who had the same personal experience with the TOPIC would share his judgement, the SUBJECT in the NP XP-pattern concedes that his judgement may be more hypothetical and idiosyncratic. The NP XP-pattern after *believe* (67 instances) is restricted to some clearly defined contexts: 12 sentences contain the comparative phrase *more than x could/would have believed possible*, in which the SUBJECT's original assessment is refuted (278a); another 12 instances express an official assumption that cannot (at present) be proved, usually to the effect that someone has died in the war (278b) or is responsible for a crime (298c). The other sentences express rather subjective beliefs, particularly about oneself (298d).

(278) a. What he was saying hurt Shiona **more than she could ever have believed possible** (BNC JXS: 4006).
b. 500 **believed killed in fighting** (BNC K22: 1163).
c. The mafia **was believed responsible** for the killing on March 12 of Salvatore Lima (BNC HLH: 1535).
d. The rage of the novel's males can sometimes be made to appear the rage of those who **believe themselves permanently beaten and cheated** (BNC A05: 1658).

[161] There is a set of exceptions in my corpus data for which I do not have an explanation. Transitory states of affairs are possible in the NP inf XP-pattern after *believe* in military contexts. The following sentences present two of the eight examples I found:

a. Typically, the first action he describes was a mistake: the bombing of Freiburg at the beginning of the war by a sQuadron [sic!] of the Luftwaffe believing itself to be **over Dijon** (BNC A4U: 10).
b. The US Navy, ..., believing herself to be **under attack**, released the missile that shot down an Iran Air Airbus (BNC HRE: 929).

Know almost never tolerates the NP XP-pattern because the greater hypothetical quality of this structure would clash with the meaning of the verb that the SUBJECT has certain knowledge about a characteristic of the TOPIC. The three instances that I found in my corpus sample are interesting because they show ways in which knowledge can exceptionally be made compatible with a high degree of subjectivity: (279a) is a poetic sentence that expresses knowledge derived from a very personal and contradictory experience; (279b) is equivalent to the comparative examples with *believe* (cf. 278a) and indicates that the SUBJECT's original knowledge has proved invalid; finally, (279c) contains a contradictory sort of knowledge that the SUBJECT has about himself.

(279) a. There was the taste of death in the kiss, but she accepted the price with the prize, and clung to the bitterness and the bliss alike, **knowing them for ever inseparable** now (BNC K8S: 2209).
b. She'd known him barely two days, and already he'd steered her through **more emotions than she'd known herself capable of** (BNC HGY: 1300).
c. Lastly, I should not choose this manner of writing, wherein **knowing myself inferior to myself**, led by the genial power of nature to another task ... (BNC KRH: 4248).

To briefly mention two other verbs of group I, *presume* and *assume* are similar to *believe* in that they indicate that the SUBJECT accepts a proposition as true although it cannot be proved in an intersubjectively convincing way. Both verbs include the additional semantic component that the SUBJECT may have doubts about the validity of the proposition himself or herself, but deliberately accepts it as true (Schneider 1988b: 328) — in the case of *presume* because the proposition is probably true although it cannot be proved yet (Schneider 1988b: 328), and in the case of *assume* because the SUBJECT accepts the proposition as "valid only within the bounds of a chain of reasoning" (Borkin 1984: 81; see also Schneider 1988b: 315-6). The typical pattern for these two verbs are *that*-clauses (280a, b), whereas the NP inf XP-pattern is a rare alternative that is only chosen when there is an experiential relationship between the SUBJECT and the TOPIC (280c, d).

(280) a. The moral is clear: when gustiness is getting near to the limit for safe flying, assume **that at any time it could suddenly increase** (BNC A0H: 200).
b. it is fair to presume **that for them Hitler remained the symbol of continued hope and determination** (BNC ADD: 217).
c. In short lesbians and gay men are assumed to influence young people over their sexuality, whilst **heterosexuals assume themselves to be neutral** (BNC CF4: 1794).
d. [E]thologists have begun to re-examine the issue of animal intellect and to ask whether the organisms they study are, as **we presume ourselves to be**, something more than mere mindless circuitry (BNC B7J: 1363).

The NP XP-pattern is very infrequent with these verbs; I found just 17 instances after *assume* and 19 after *presume*. The examples with *assume* typically belong to a scientific context in which the SUBJECT deliberately accepts some quality of the TOPIC as given for the purposes of

reasoning even though he knows that this quality is not objectively true (281a); the instances with *presume* (281b, c) are comparable to those cases with *believe* that express official assumptions about the death or legal status of a person (cf. 278b, c).

(281) a. For simplicity in this analysis **the leadscrew has been assumed ideal** (BNC H7R: 338).
b. 12,000 were left homeless, with thousands more still missing and **presumed dead** (BNC HLD: 1189).
c. [T]he Old Thunderer even confessed itself vexed by the 'overmagnanimous spirit of the British law, which always **presumes a man innocent** until he is proven guilty' (BNC EDE: 1116).

11.2.2 Group II: prototypical association with NP inf XP and NP XP

Of the items in group II, only *reckon* and *think* are prototypically followed by a *that*-clause. Compared to verbs of group I, they signal a weaker commitment to the factual status of the dependent proposition (282) (cf. Ransom 1986: 71).

(282) a. "I reckon **the way to this woman's heart is through her mind**." (BNC A0L: 1407).
b. The militants were tempted to think **that the door to their ambitions was ajar** (BNC ABA: 964).

We will not concern ourselves with the variable and heterogeneous kinds of information that can be conveyed by *that*-clauses after *reckon* and *think*, but rather with the semantic conditions constraining the non-finite, and particularly the NP XP-pattern after *consider*, *judge*, *deem*, *reckon* and *think*. Even more so than the NP inf XP-pattern after verbs of group I, sentences including the NP XP-pattern after *consider*-type verbs must express "a self-initiated, original opinion, rather than a recognition of the truth of a proposition formed by someone else" (Borkin 1984: 78), i.e. they must denote a subjective judgement of the SUBJECT that is based on his or her personal experience with the TOPIC. Empirically verifiable attributes, which have some validity independent of the SUBJECT's perceptions, are therefore less felicitous than personal judgements (283a). Moreover, permanent characteristics are again more natural than temporary attributes (283b)[162]; in (283c), the permanent interpretation of the adjective *sick*, as 'perverted' instead of 'ill', is forced by the construction (Rapoport 1993: 178-9, footnote 16).

(283) a. Mrs. Searle deems her teacups **?broken/worthless**, although in my opinion they are only slightly cracked. (adapted from Borkin 1973: 46)
b. John considers her **knowledgeable enough/?briefed well enough** to handle the situation. (from Borkin 1984: 80)
c. I consider him **sick**. (from Rapoport 1993: 178)

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[162] *Judge* is also compatible with temporary states of affairs:

Samuel Roberts, **judging the moment to be ripe**, rapped on the table with a silver spoon (BNC HTS: 2499).

The major difference between verbs of group I and those of group II is that the latter express a more subjective judgement, not only when followed by *that*-clauses, but also in combination with NP (*to*) XP. While NP XP is only a marginal alternative for the verbs of the first group, which describe judgements that are based on knowledge and belief, it becomes the central pattern for verbs of the second group, which describe the SUBJECT's unique and original judgement of the TOPIC. The unique judgements expressed by verbs such as *consider* may not be intersubjectively verifiable, but they are typically based on serious and rational deliberations and are subjectively "rated as 'true'" (Schneider 1988c: 163). While *consider* expresses all kinds of subjective judgements that have been arrived at after some thoughtful reflection, *judge* (284a, a') and particularly *deem* (284b, b') are in the main found in formal and official contexts (Schneider 1988b: 352-3). *Think* also typically occurs in formal contexts when combined with the NP (*to*) XP-pattern (284c, c'), but it is also sometimes found in more colloquial sentences (284c").

(284) a. They do not propose to enter into work in school which makes achievement in competitive examinations possible, **having judged this to be highly undesirable** (BNC CLW: 427).
a'. We must continue to make it clear to potential aggressors, however, that we should strike back with all the means that we **judge appropriate**, conventional or nuclear (BNC ABA: 1214).
b. [P]olice organizations have asserted themselves more publicly to promote not only their own organization, but also particular policies regarding law and order which they **deem to be necessary** (BNC GV5: 1124).
b'. [T]he ANC held its biggest public meeting on Sunday in the Transkei since Pretoria **deemed the organisation unlawful** in 1960 (BNC A28: 281).
c. If the decision is illegal it can be quashed; otherwise the court cannot ... intervene, even if it **thinks the decision to be wrong** in some respect (BNC EBM: 94).
c'. This gives the authority the power, if it **thinks fit**, to refer the matter to the D.P.P. (BNC EVK: 1399).[163]
c". How on earth could she even **think Piers sexy**? (BNC H8H: 1068).

To recapitulate: sentences with verbs of group II, particularly when combined with the NP XP-pattern, express rational and thoughtful judgements like sentences with verbs of group I in the NP inf XP-pattern. However, while the group I-sentences communicate the sense that similar sorts of judgement could be reached by anyone having the SUBJECTs' experience with the TOPIC, so that these judgements might ultimately be open to empirical verification, the group II-sentences emphasise that the judgements depend on the SUBJECTs' idiosyncratic, if rationally based, view of things. (285a) communicates the sense that the Danes do not need to consider themselves European citizens although they have joined the European Union. While a sentence such as *The Danes don't believe themselves to be European citizens* would be odd

[163] The NP XP-pattern after *think* frequently contains expressions such as *think fit/proper/possible*, in which the TOPIC is left unspecified. These phrases, which are felt to be "an indivisable semantic whole" (Visser 1963: 476), are relics from earlier stages of English when a semantically vague pronoun did not have to be obligatorily realised as *it* (Visser 1963: 467).

because it could be empirically invalidated, the SUBJECTS in the sentence *The Danes don't consider themselves European citizens* hold an opinion that they know is empirically incorrect, but is nevertheless true with respect to their personal view of the situation. Similarly, the speaker in (285b) deliberately decides not to consider himself a Christian any longer, and while he may still be a Christian from a more objective point of view (because he is baptised, still belongs to the church, etc.), this is immaterial to the personal view of his religious identity.

(285) a. The Danes said Yes to Maastricht only because other governments solemnly reassured them at Edinburgh last December that **they need not consider themselves European citizens** (BNC CRB: 236).
b. "I am writing to tell you that **I no longer** believe in God or **consider myself a Christian**" (BNC C8V: 1430).

The distinctions between verbs of group I followed by NP inf XP and verbs of group II followed by NP XP can be brought out in carefully constructed sentence pairs[164]: (286a) with *believe* NP inf XP is preferable to *consider* NP XP (286a') because a family relationship can be empirically verified. Of course, a sentence such as *Bob considers Sam his father* is possible, but it would mean that Sam is not Bob's true father, but that Bob personally decides to consider Sam as such. (286b') with *consider* NP XP is favoured over (286b) because the rude classification of a person as a piece of furniture can only be made from a subjective point of view, and it is hardly conceivable that all other persons having the same experience with the TOPIC would reach a similar sort of judgement; along the same lines, *consider* NP XP is more felicitous in the third and fourth sentence pair than *believe/consider* NP inf XP because the SUBJECT deliberately decides to view the TOPIC in a way that is contrary to fact.[165]

(286) a. I just found out that Sally isn't related to me at all, and it surprises me because **I always believed her to be my sister**. (30)
a'. ?I just found out that Sally isn't related to me at all, and it surprises me because **I always considered her my sister**. (15) (adapted from Borkin 1973: 46)
b. ?Mary always **believed her boyfriend to be part of the furniture**. (11)
b'. Mary always **considered her boyfriend part of the furniture**. (34) (adapted from Borkin 1973: 46)
c. ?John **believes that girl to be an idiot** although he knows that she is actually quite intelligent (12)
c'. John **considers that girl an idiot** although he knows that she is actually quite

[164] The numbers given in parentheses indicate how many of my 45 informants chose one sentence or the other.
[165] Since sentences with verbs of group II that are followed by the NP inf XP-pattern are somewhat in between sentences with verbs of group I followed by NP inf XP and sentences with verbs of group II followed by NP XP, it is more difficult to work out appreciable semantic distinctions between pairs of sentences with, for example, *believe* NP inf XP and *consider* NP inf XP or *consider* NP inf XP and *consider* NP XP in evaluation tests. My corpus data reveal that such distinctions do exist, though. To give an example with *reckon*: while *reckon* with the NP inf XP-pattern is often used to express a (verifiable) assessment about age, height, etc. (cf. a), *reckon* followed by NP XP is typically used to assess more subjective qualities (cf. b).

a. I reckoned him **to be about forty-ish**, a family man (BNC BN3: 1940).
b. Mr Dini, for his part, was reckoned **too political** (BNC CR9: 2662).

intelligent (33).
d. ?Even though Sally is 25, I still **consider her to be a stupid child** (9).
d'. Even though Sally is 25, I still **consider her a stupid child** (36).

11.2.3 Groups III and IV: prototypical association with NP XP and NP *as* XP

When *find* is followed by a *that*-clause or NP inf XP, it shows many similarities to verbs of group I, the main difference being that the content of the dependent proposition is not presented as knowledge or belief that has been gained over a longer period of time, but that has only recently been found out. The finite-clause construction is used when there is not necessarily an experiential relationship between the SUBJECT and the TOPIC (287a), while NP inf XP again favours direct experience, frequently in scientific or medical contexts (287b, c).

(287) a. It was a lovely sight to see all the sleeping hens on their perch and exciting to open up the door in the morning to find **they had laid eggs** for our breakfast in the three nest boxes on the floor (BNC B22: 1531).
b. **Two scientists**, Schumman and Went, sampled other pines there in the mid-1950s and **found the oldest to be about 4900 years** (BNC B78: 2110).
c. When interviewing Margaret, **the therapist found her to be moderately depressed** (BNC B30: 608).

The prototypical NP XP-pattern with *find* is semantically similar to this pattern after verbs of group II. While NP inf XP denotes "the discovery of a fact" (Duffley 1992: 48) that is open to empirical verification, the NP XP-pattern conveys subjective judgements that express the SUBJECT's personal view of a situation. There is, however, a slight difference between sentences with verbs of group II when followed by the the NP XP-pattern and sentences with *find* followed by this pattern: the former verbs describe personal, but rational judgements, which have been reached after some thoughtful deliberation, whereas *find* is used in sentences that express judgements that have a strong egocentric colouring, and are sometimes spontaneous reactions to TOPICS that are not very important (288a, b). Very often, the judgements refer to a temporary state of affairs (288c) and not a permanent quality of the TOPIC. The subjective and not very rational nature of the judgements expressed by *find* in the NP XP-pattern is emphasised by the fact that the quality denoted by XP is frequently (in 328 out of 1,009 instances) modified by intensifiers such as *almost*, *awfully*, *bloody*, *extremely*, *a little*, *particularly* or *really* (288d).

(288) a. I find hot showers **disgusting** (BNC ABS: 1718).
b. She likes all our regulars but finds the crossword **a bit hard**! (BNC A17: 723).
c. [S]he tossed her head frequently, as if finding the heat **oppressive** (BNC FU8: 1443).
d. As in the UK, bright young people find it **extra galling** that some of those who are occupying the jobs they need are not nearly as bright as they (BNC B7C: 492).

While the NP *as* XP-pattern is also a reasonably common variant for verbs of group II, it is the prototypical structure for verbs of group IV. Like *find*, *fancy* denotes speculative sorts of

judgement, which frequently have positive connotations (Schneider 1988b: 337). The NP inf XP-pattern is rare with this verb and practically restricted to sports contexts (289a); sentences with the NP XP-pattern often express a judgement that the SUBJECT only imagines to be true, but which the speaker knows is false (289b). The most frequent construction for *fancy* is NP *as* XP, which is found in contexts similar to those of the NP XP-pattern (289c).

(289) a. I fancy **Jimmy to go all the way and win the tournament** (BNC K51: 1938).
b. He fancied **himself in love with me**, the silly boy, but that was absurd (B20: 261).
c. "[F]ancy **yourself as a hero**, do you?" (BNC ACB: 2985).

Count, which is not attested in the NP inf XP-pattern, is used equally often with NP XP as with NP *as* XP. What is particularly noteworthy about this verb is that it mostly occurs in collocational patterns (Schneider 1988b: 356), with XP frequently being realised as *lucky/fortunate* (40 instances), *a success* (9 instances) or *among* NP (39 instances) (290).

(290) a. He counts himself **lucky** to have avoided being shot (BNC HH3: 4611).
b. That the evening could still be counted **a success** was partly down to the attack and verve of the Liverpool Philharmonic Choir (BNC A1R: 59).
c. [T]he whole process cannot be counted **as a success** if every step has to be repeated for the next discrete problem (BNC CGS: 2918).
d. President Vaclav Havel, who counts many Liberal Club signatories **among his closest friends**, has refrained from taking sides (BNC ABD: 1585).

Regard, *think of* and *view* occur almost exclusively in the NP *as* XP-pattern (291a-a"); the NP inf XP and NP XP-patterns are only marginally found with *regard* (291b, b'; 0.3% and 0.5% of all instances, respectively) and *view* (291c, c'; both 0.2% each of all instances).[166] I did not find an instance of *think of* followed by NP inf XP in my corpus sample, and only one example with NP XP (291d).

(291) a. Poststructuralists aspire to remove **what they regard as the arbitrary distinctions** between literature, criticism, theory, and philosophy (BNC A1A: 1040).
a'. It was then but an intellectual elision to **view abstraction as the purest of all styles**, since it depicted nothing at all (BNC A7M: 156).
a". His fellow-undergraduates **thought of him as a gangly youth with brown hair** (BNC A68: 364).
b. I have already mentioned that I **regard the inductivist account of science to be very wrong and dangerously misleading** (BNC FBE: 207).
b'. Let me ask you whether **you would regard yourself a depressive person**? (BNC FLF: 11).
c. According to the report the pardon indicated that **Assad no longer viewed the**

[166] Interestingly, both patterns are sometimes employed as structural alternatives to NP *as* XP when this pattern is not possible. In the following sentences, in which XP is preposed, the use of the *as*-pattern would necessitate the highly doubtful pied-piping or stranding of *as* (cf. 4.3).

a. [E]xhibitions can be a powerful sales tool and not **the expensive luxury that many companies regard them to be** (BNC K94: 1468).
a'. ??... the expensive luxury as which many companies regard them/ ??... the expensive luxury which many companies regard them as.
b. **So important was this regarded** that in the final quarter of the fourteenth century a system of coastal defence on land was developed (BNC EDF: 1411).
b'. ??As so important was this regarded that .../ ??So important was this regarded as that ...

Brotherhood to be a viable threat (BNC HLE: 2391).

c'. Those committeemen **who once viewed him obsolete** ... have been afflicted by a creeping reverence (BNC CU1: 1097).

d. ... the play's Prologue, in which an alcoholic tinker called Christopher Sly is persuaded by a group of gentry to **think of himself an aristocrat** (BNC AHG: 1096).

The semantic differences between verbs of group IV followed by NP *as* XP and verbs of group II followed by NP XP are marginal. Like *consider*-type verbs (but unlike *find*), *regard*-type verbs express subjective judgements of permanent, and not temporary characteristics of the TOPIC. It has sometimes been argued that *regard*-type verbs denote more subjective judgements than *consider*-type verbs (Borkin 1984: 64). This seems to be true of *think of* (Schneider 1988b: 357), which frequently occurs in sentences that show that the SUBJECT's judgement of the TOPIC is very idiosyncratic (note the frequent use of *like to think of*, *tend to think of*, *still think of* and the high number of reflexive pronouns as TOPIC; 292a-c). To a lesser degree, idiosyncrasy also plays a role in sentences with *view* (Schneider 1988b: 354-5). *Regard*, by comparison, does not distinguish itself by the greater subjectivity of the sentences it occurs in; in fact, *regard* is typically used for consciously and rationally held opinions in text categories such as commerce and finance, world affairs, and social science. As matters stand, the distinction between the *consider* NP XP and the *regard* NP *as* XP-patterns has to be sought elsewhere (see 11.4.6.2).

(292) a. Some people in publishing **like to think of theirs as a glamorous medium** (BNC B7C: 34).

b. I think **he thinks of me still as more of a child** (BNC FU1: 1518).

c. So **he thinks of himself as a warm-hearted, caring human being** (BNC A08: 2021).

11.2.4 Extensions from the core: less prototypical qualifying verbs

Like the RESULTATIVE and DEPICTIVE Constructions, the QUALIFYING Construction has a prototypical centre and various less typical extensions from the core. I will provide two examples of qualifying verb groups that are further removed from the typical instances represented by the four groups of verbs detailed above, namely verbs of perception and *describe*-type verbs.

Sentence (293a) is an instance of the PERCEPTION Construction, in which the SUBJECT perceives a TOPIC participating in event. (293b), however, straddles the distinction between the PERCEPTION Construction and the non-finite qualifying pattern: the verb *see* no longer denotes an immediate visual perception as in (293a), but rather an "inference" (Duffley 1992: 31) or the mental apprehension of a fact (Bolinger 1974: 66-7). In contrast to a typical qualifying sentence, however, (293b) does not provide a permanent judgement on the TOPIC, but a judgement which has been inferred from a particular situation and which is restricted to that situation. Not all verbs of perception are semantically compatible with this inferential con-

struction, though. *Watch*, for example, is exclusively associated with the concrete PERCEPTUAL Construction (cf. **I watched flight to be impossible*); *ceteris paribus*, there are also verbs that can only be used in inferential sentences (**Mary discerned John cross the street* vs. *Mary discerned the figure to be a woman*) (Bolinger 1974: 67; Duffley 1992: 32-3). (293c), finally, is an example of the verb *see* in a typical qualifying sentence. Verbs such as *see* or *look upon* fulfil the same function in the *AS*-QUALIFYING Construction as *regard* or *view*, which are also perception verbs etymologically and can still sometimes be used as such in modern English (293d, e).

(293) a. Mary saw John cross the street.
b. Seeing flight to be impossible, he surrendered. (from Jespersen 1940: 280)
c. I see John as my friend.
d. He turned from the fire to regard her, and Grainne saw the leaping flames reflected in his eyes (BNC G10: 2028).
e. The only way to view the Chancellor was by scrambling through the neighbouring graveyard (BNC A4R: 42).

I also submit that sentences with *describe*-type verbs represent non-prototypical instances of the qualifying NP *as* XP-pattern. *Describe*-type verbs include verbs such as *characterise*, *define*, *depict*, *describe*, *interpret*, *paint*, *portray*, *represent*, as well as verbs evaluating the TOPIC in a positive (*appreciate*, *esteem*, *honour*, *praise*, *value*, etc.) or negative way (*condemn*, *denounce*, *dismiss*, *reject*, etc.) (294). The only grammarian I know of who explicitly classifies these verbs with the other qualifying verbs is Poutsma, who states that *regard*-type verbs convey a "practically unmodified judging", while *describe*-type verbs express a "distinctly modified judging" (1928: 354).

(294) a. Moon rats have an irritable nature and can hardly be **described as attractive** (BNC CK2: 1384).
b. For example, we can **characterise the human body as a system** which is comprised of a number of sub-systems (BNC GVN: 267).
c. He gave art an openly political meaning and did not **appreciate the artist as an individual dissenting voice** (BNC CKY: 133).
d. It is too pure for this impure world, therefore they **condemn it as vile** (BNC ABL: 519).

Such sentences have caused problems in both descriptive and generative accounts because, unlike with *regard*-type verbs, the secondary predicate does not need to appear obligatorily after *describe*-type verbs (cf. ??*I regarded him* vs. *I described him*). Nevertheless, it is not necessary to ascribe different valencies to *regard*-type and *describe*-type verbs, for example by treating the complement of *regard* as an SC and that of *describe* as a direct object plus a second subcategorised phrase (cf. 5.4).[167] Both types of verbs can be seen as instantiating the

[167] It is not possible to characterise the secondary predicate after *describe*-type verbs as a depictive phrase. Unlike *as*-depictive phrases, which can only be realised by an NP (e.g. *John visited me **as my lawyer***), the XP after *describe*-type verbs allows the same range of categorial realisations as the XP after *regard*-type verbs. Of

QC: not only two different *regard*-type verbs (295a), but also a *regard*-type and a *describe*-type verb are frequently used in parallel constructions (295b). In a number of cases, a *regard*-type and a *describe*-type verb are even coordinated (295c).

(295) a. While society continues to idealize the two-parent family and **regard it as** the norm, there is a danger that remarriage will be **seen as** the solution to the individual and social problems associated (BNC CN6: 855).
b. Gilpin (1987), like many liberal economists, **regards it as** contrary to consumer interests, whereas others **describe it as** 'a ray of hope in a dismal world' (BNC EEF: 1465).
c. The association might encourage the development of shared publicity and marketing to ensure as much effective publicity and ticket sales promotion as it is possible to provide, both for those projects and those which we **regard and cherish as** our own (BNC KS5: 71).

In contrast to *regard*-type verbs, *describe*-type verbs can also be used in a construction with a single postverbal NP and without a secondary predicate (296a). Without wanting to go into a detailed semantic analysis, it is obvious that this MANNER-OF-QUALIFICATION Construction only tolerates *describe*-type verbs, whose meaning specifies the way in which the TOPIC is qualified, but not *regard*-type verbs, whose semantics only express the fact that the TOPIC is qualified, but not the manner in which this is done. In other words, a (non-perceptual) sentence such as ??*I regard Jim* does not contain enough information to be felicitous because *regard* does not lexicalise a manner-component like *characterise*, *condemn* or *value*. This is comparable to sentences with default resultative verbs such as *render* or *make*, which only convey the meaning that the force-recipient is changed, but do not specify the manner in which this is done and are therefore not acceptable in the MANNER-OF-ACTIVITY Construction (cf. **I rendered John* vs. *I painted the wall*; see 9.2.3). When a manner-component is supplied by an additional phrase, *regard*-type verbs can be used in the MANNER-OF-QUALIFICATION Construction, though (296b, b'). The manner-component of *describe*-type verbs can be enriched in similar ways (296c, c').

(296) a. We **value** our privacy (BNC AHN: 1524).
b. Field staff **regard** their work **in intensely practical terms** (BNC FA1: 785).
b'. "We **view** Brown's behaviour **very seriously**," said the presiding official (BNC A6Y: 754).
c. Their narrow perspective alienates them from broad-minded people who **value** the business **in broader terms** (BNC EW5: 1350).
c'. The former king **condemns** the Kabul regime **with the same tone** he used when the Soviet troops were in Afghanistan (BNC A28: 20).

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the 350 instances of *describe* followed by NP *as* XP that I extracted from the BNC, XP is realised by an NP in 67% of all cases, but it can also be realised by an adjective (in 22% of all instances; cf. 294a, d), by a PP (in 3% of all instances; cf. a), and even by a VP (in 7% of all instances; cf. b).

a. Lightman took into account the Irishman's financial situation, which he described as '**in pretty bad shape**' (BNC A9H: 512).
b. This realpolitik was most vividly demonstrated by the Ford purchase, an act an automotive Harold Macmillan might have condemned as **selling the family silver** (BNC EDT: 864).

The QUALIFYING Construction and the MANNER-OF-QUALIFICATION construction are semantically very close and are also sometimes combined (cf. 4.3):

(297) a. [T]hey **view** their Southern compatriots **at best with indifference and at worst as traitors** who sold them out to the loyalists (BNC A07: 66).
b. In the West, the majority of people tended to **regard** modern artists **with suspicion**, **as charlatans without a real job** (BNC A7M: 1181).
c. Hitler is still today **regarded** there **in 'heroic' terms as a 'great statesman' and significant personality'** (BNC ADD: 1196).
d. [T]hey are **regarded suspiciously as possible Trojan horses** (BNC FPR: 149).

A constructional account can therefore give a rather straightforward explanation for the distribution of *regard*-type and *describe*-type verbs without having to take recourse to different sememes and valencies of these verbs in qualifying and manner-of-qualification sentences (cf. Aarts 1992: 116-9).

11.3 Formalising the semantic differences: a mental-space account

The semantics of qualifying constructions are more difficult to formalise than those of the force-dynamic secondary-predicate constructions because qualifying sentences conceptualise mental processes that do not have a correlate in 'reality'. The most innovative look at such more abstract cognitive configurations has been taken by Fauconnier. The basic idea behind his mental-space theory is that human beings actively construct and flexibly switch between cognitive domains when they think and talk (1997: 35-6), so that "the unfolding of discourse" can be regarded as "a succession of cognitive configurations" (1997: 38). The formal modelling of such cognitive configurations in the mental-space framework helps to reveal and illustrate the rather abstract meaning-constructions that are set up by some sentence types. Unlike possible worlds, mental spaces are conceptual in nature and do not have any ontological basis outside of the mind; they are predicated on the fundamental insight that human beings are able "to entertain multiple world views and functional world views" (Sweetser and Fauconnier 1996: 3).

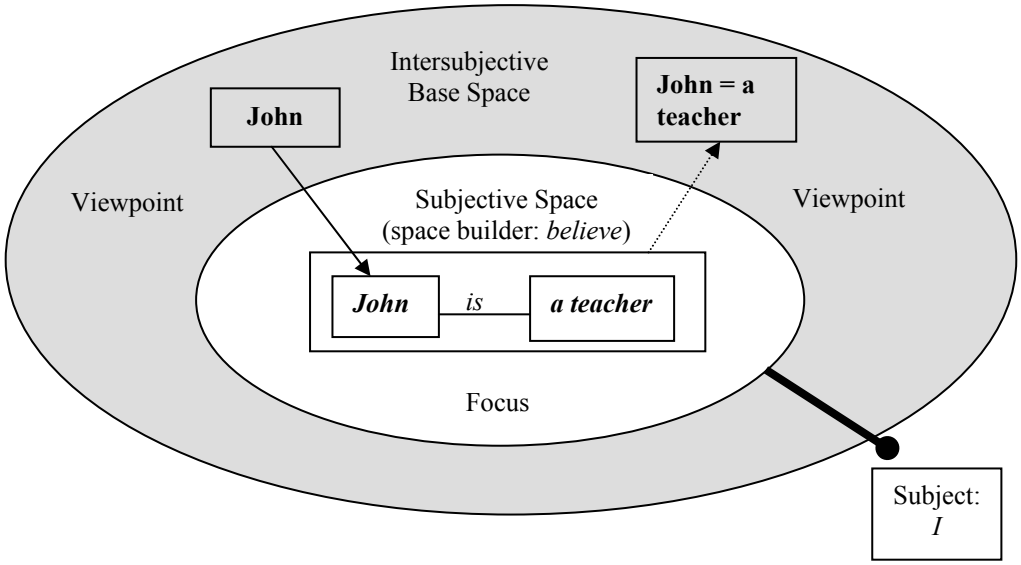
For a mental-space account to be feasible, there must be at least two mental spaces, "one primary and the other dependent on it" (Sweetser and Fauconnier 1996: 2). The primary space is called the 'Base Space', and a second space is set up relative to this original space. The number of spaces proliferates in discourse, with the consequence that, "[m]etaphorically speaking, the discourse participants move through the space lattice" (Fauconnier 1997: 38). Since we are only looking at the small segment of discourse that is represented by a qualifying pattern, a configuration of two spaces will suffice for our purpose. A new mental space is set up relative to the Base Space when this is induced by a so-called space builder. Space builders such as *in 1945*, *maybe* or *in the photo* can open spaces that refer to new "time peri-

ods, possible and impossible worlds, intentional states and propositional attitudes, epistemic and deontic modalities, pictures ... and so on" (Sweetser and Fauconnier 1996: 9). In the context of qualifying constructions, the Base Space represents information provided by background knowledge and the previous discourse. Mental verbs such as *believe*, *think* or *consider* are space builders that set up a new 'Subjective Space' relative to the Base Space. There is an epistemic divide between the two spaces because the Subjective Space partitions off information on the beliefs of a person from the more factual information provided by the Base. Thus, while the Base contains information that the interlocutors look upon as being intersubjectively valid, the Subjective Space demarcates information that is of a more personal and hypothetical nature.

To introduce some more mental-space terminology: the dependent space, in our case the Subjective Space, is the 'focus', i.e. the space that is currently structured and therefore in the focus of attention; either the Base Space or the Subjective Space serves as 'viewpoint', i.e. as the point of view from which the focus space is accessed (Fauconnier 1997: 38-9). The Subjective Space is not an ontologically independent possible world that must be created from scratch; when the Base Space serves as viewpoint, the dependent space is linked to the Base by connectors that relate most elements across the two spaces (Fauconnier 1997: 40). In other words, most of the default background knowledge structuring the Base will be available in the Subjective Space as well. The so-called 'Access Principle' states that "an expression that names or describes an element in one mental space can be used to *access* a counterpart of that element in another mental space" (Fauconnier 1997: 41). When a term such as *John* appears in a dependent Subjective Space, for example, all the background knowledge evoked by this term is freely transferred from the Base into the Subjective Space. In case the Subjective Space serves as viewpoint, however, access from the Base is limited and a term such as *John* is directly introduced into the Subjective Space.

Figure 23 illustrates the mental-space configuration underlying a sentence such as *I believe that John is a teacher*, which is an example of what I will call the FINITE OPINION Construction.

Figure 23: Mental-space configuration underlying the FINITE OPINION Construction (*I believe that John is a teacher*)



What the space builder *believe* does is generate a new space and indicate that this space is epistemically separated from the Base Space. While the Base represents the factual background knowledge shared by the discourse participants, the Subjective Space partitions off some non-factual unit of information. A Subjective Space must always be anchored by a SUBJECT that holds the belief, in this case the speaker denoted by the first-person pronoun. Since the Base serves as viewpoint, the downward arrow indicates that the factual information shared by the interlocutors about the TOPIC *John* is freely transferred from the Base Space into the Subjective Space; in other words, the speaker does not presuppose any knowledge of the TOPIC that is not familiar to the hearer as well. In the Subjective Space, *John* is qualified as 'a teacher'[168]. Since verbs of group I such as *know* or *believe* suggest that the content of the *that*-clause is probably true, the qualification of John as a teacher is seen from the point of view of the Base Space and is therefore supposed to float back into the Base, a fact that is indicated by the upward arrow. When the second discourse participant confirms the proposition made in the Subjective Space (*Of course, he is a teacher*), the proposition becomes a firm part of the Base Space; when the proposition is rejected (*No, he is a janitor*), the Subjective Space disappears without having had an effect on the Base Space. When the hearer cannot prove or disprove the speaker's hypothetical proposition, the information that John is a teacher will by default be transferred into the Base Space, but with the reservation that it is based on the speaker's belief, and not yet on clear, factual evidence (this is indicated by the use of a dotted arrow). As Ransom observes,

[168] Only *that*-clauses containing categorical judgements will be considered here because thetic predications such as *I believe that John will visit us tomorrow* do not have a counterpart in the other qualifying constructions.

> the expectation of it [the subordinate proposition; H.S.] being the case is semantically entailed, and if the proposition is coupled with an expression asserting that it is not expected, native speakers will judge that a contradiction or anomaly arises, but if the expression merely asserts a possible alternative, no contradiction is felt to arise. (Ransom 1986: 74)

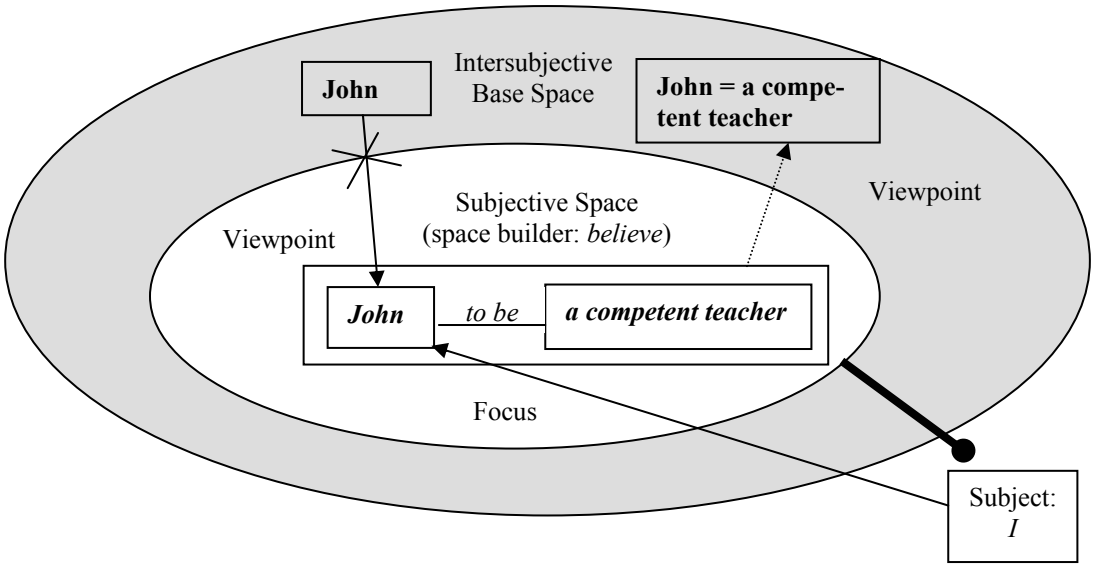
To give an example: while ??*I believe that John is a teacher, but it's not possible that he is* is an anomalous statement because the qualification of John as a teacher is prevented from floating back into the Base, the sentence *I believe that John is a teacher, but he may not be* is fine because it only highlights the fact that the speaker's qualification of John is not completely certain. The reservations about the truth value of the subordinate proposition are more pronounced with verbs of group II such as *think*, which express stronger doubts as to the validity of the *that*-clause proposition, than with verbs of group I such as *believe* or *know*. Similarly, the degree of certainty can also be indicated by a modal in the *that*-clause: *Around the world, many cultures believe that any harm done to a dolphin* ***may*** *cause ill-fortune or sickness* (BNC ABC: 56).

A subordinate *that*-clause after mental verbs such as *believe* or *think* represents an independent piece of information which, while anchored by the person denoted by the main-clause subject, is independent enough from the subjective views of this person to allow information from the Base Space — the viewpoint — to access the Subjective Space. In other words, the FINITE OPINION Construction expresses "a two-place relation between a person [the SUBJECT; H.S.] ... and something that person believes" (Dik 1981: 20), and not between the SUBJECT and the TOPIC. The TOPIC is enclosed in the subordinate proposition and remains independent of the SUBJECT's personal views and experience: "the complement is presented in a 'detached', objective way; no further involvement on the part of ... [the main-clause SUBJECT; H.S.] is suggested than that he happens to have this opinion" (Dik 1997: 349-50). Structurally, the independence of the TOPIC from the SUBJECT is mirrored by the fact that the TOPIC does not belong to the main clause, but is an element of the subordinate *that*-clause. This accords well with Borkin's intuition that "the formation of *that*-clauses ... maintains the integrity and independence" of the subordinate proposition both in structural and in semantic terms (1984: 76).

Things are a little bit different with a sentence such as *I believe John to be a competent teacher*, which illustrates what I will call the NON-FINITE OPINION Construction. As we have seen, this construction is typically used when there is a personal, experiential relationship between the SUBJECT and the TOPIC, i.e. when the judgement given on the TOPIC depends on the SUBJECT's experience with it. As a consequence, the TOPIC *John* referred to in the Subjective Space is not identical to the entity *John* in the Base Space, but is based on the speaker's personal view. Characteristics of the TOPIC are not transferred from the Base to the Subjective Space, but are directly introduced into the Subjective Space; to put it another way, access

from the Base Space is limited because the TOPIC is seen from the point of view of the Subjective Space. Similar to the FINITE OPINION Construction, however, the speaker's qualification of John is supposed to be transferred back to the Base Space (again with the reservation that the information given in the Subjective Space is not yet factual knowledge); the viewpoint, which has been in the Subjective Space when the TOPIC *John* has been introduced, therefore shifts to the Base Space with respect to the qualification that John is a competent teacher.

Figure 24: Mental-space configuration underlying the NON-FINITE OPINION Construction (*I believe John to be a competent teacher*)



This mental-space configuration is reflected by the syntactic structure of the non-finite construction; as Wierzbicka observes, "the structural link between the main verb and its 'surface object' begins to make sense, since it is shown to reflect a semantic link between a predicate of thinking ... and the entity thought about" (1988: 53; see also Mair 1990: 200; Steever 1977: 594-5; Ureland 1973: 298)[169]; in other words, the syntactic closeness between the SUBJECT and the TOPIC in the NON-FINITE OPINION Construction mirrors a higher degree of semantic closeness (cf. Borkin 1984: 99-102) because the TOPIC is dependent on the personal experience and judgement of the SUBJECT. While, as Riddle notes, "*that* complements describe situations which are more objectively true and where there is a greater psychological distance between the subject or speaker and the object" (1975: 473), Borkin has opined that the syntactic disintegration of a subordinate clause reflects a "semantic disintegration of whole proposi-

[169] Since generative grammarians do not usually acknowledge this link, it is remarkable that Hornstein and Lightfoot have suggested that "some kind of secondary semantic relationship exists between *believe* and the following NP" (1987: 48); this idea has not been taken up in the generative treatment of non-finite clauses after *believe*, though.

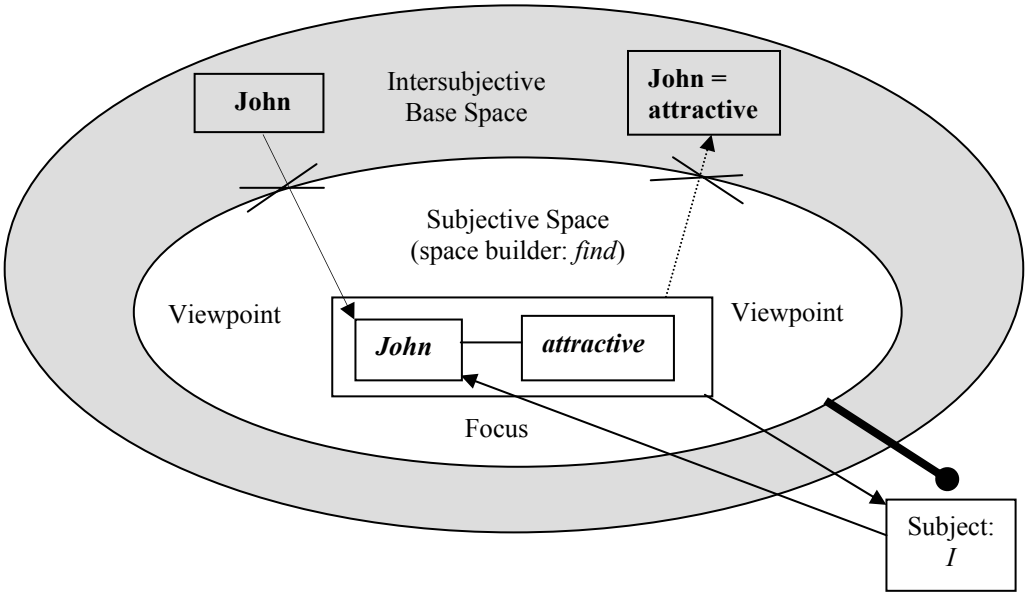
tions and potential states of affairs relevant to empirical reality, into elements whose status is more dependent on human perception" (1973: 55). Despite all claims to the contrary (cf. 4.2), therefore, there is in fact a semantic link between the main-clause SUBJECT and the NP_2 in a sentence such as *I believe John to be a competent teacher*, which could be brought out by the paraphrase 'I believe about John that he is a competent teacher'.[170] Unlike in the FINITE OPINION Construction, the TOPIC in the NON-FINITE OPINION Construction has a semantic relation both with the main-clause subject and with the XP that adds the qualification. To take up some basic ideas of Langacker's in his characterisation of the difference between the sentences *I expect that Don will leave* and *I expect Don to leave* (1999a: 336-7), a sentence such as *I believe that John is a teacher* directly profiles a relationship between the SUBJECT and a proposition, while the sentence *I believe John to be a competent teacher* profiles the relation between the SUBJECT and the proposition only indirectly, mediated by the entity *John*, which stands metonymically for the proposition it is part of: "Metonymy instantiates our basic cognitive ability to invoke one conceived entity as a reference point for purposes of establishing mental contact with another" (Langacker 1999a: 358-9). In this view, the NON-FINITE OPINION Construction establishes a semantic link between the SUBJECT and the TOPIC, which is the most salient entity in the subordinate proposition, rather than between the SUBJECT and the subordinate proposition as a whole. The NON-FINITE OPINION Construction thus accords greater prominence to the TOPIC than the FINITE OPINION Construction does (DeGroot 1981: 48; Dik 1997: 350).

Sentences such as *I find John attractive* or *I regard John as a genius*, which are instances of the QUALIFYING Construction proper, also convey the sense that what is attributed to the TOPIC is a function of the SUBJECT's experience with it; the TOPIC is therefore presented from the point of view of the Subjective Space. In contrast to the NON-FINITE OPINION Construction, the judgement given in a QUALIFYING Construction is marked as idiosyncratic and personal and is therefore not supposed to float back to the Base Space. The hearer will not typically prove or disprove the information given in the Subjective Space, but will accept it as the speaker's personal view. A likely reply to the sentence *I find John attractive* will consequently not be *No, he is unattractive*, but *You really do?*, which merely expresses surprise at the

[170] This semantic link has already been pointed out by Bolinger, who has observed that NON-FINITE OPINION sentences in which the string 'main clause subject-verb-NP_2' is semantically compatible with the meaning of the whole construction are more felicitous than sentences in which there is a semantic clash between this string and the sentence as a whole (1967a: 48). The sentence "*We believe these ideas to be constructive and helpful*" is more acceptable than "?*We believe these ideas to be destructive and worthless*" (Bolinger 1967a: 51) because the "apparent constituent" (Bolinger 1967a: 50) *I believe these ideas* is semantically compatible only with the first sentence.

speaker's judgement, but does not challenge its validity. Since the Subjective Space created by a QUALIFYING Construction also serves as viewpoint for the SUBJECT's qualification of the TOPIC, the Subjective Space is almost completely closed off from the Base Space (figure 25).

Figure 25: Mental-space configuration underlying the QUALIFYING Construction (*I find John attractive*)



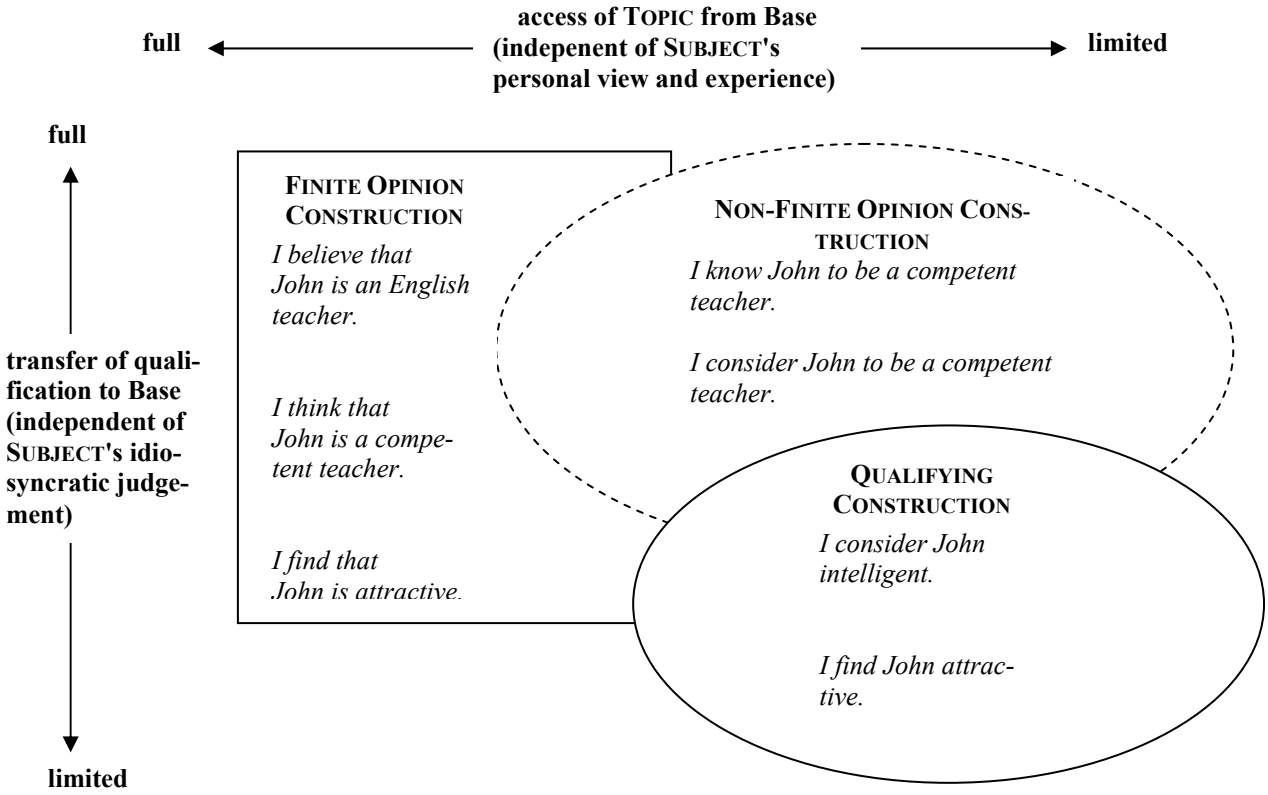
The lack of independence of the qualification expressed in the Subjective Space from the main-clause SUBJECT is reflected in the structure of the QUALIFYING Construction; as compared to the NON-FINITE OPINION Construction, the secondary predicate XP

> not only becomes syntactically more like an adjunct to this NP [the TOPIC NP; H.S.] and more of a part of the higher clause itself, but semantically its characteristics are also more adjunct-like, in that it functions less like a proposition evaluable as true or false or less like a state of affairs seen as existing or not existing independently of a particular person. (Borkin 1973: 54)

While both the TOPIC NP and the qualifying predicate are syntactically independent of the matrix clause in the FINITE OPINION Construction (and therefore semantically independent of the main-clause SUBJECT), a NON-FINITE OPINION Construction only includes an independent infinitival predicate, while the TOPIC NP has been integrated into the matrix clause — with the consequence that the TOPIC is dependent on the personal views of the SUBJECT and only the qualification expressed by the non-finite predicate can be transferred into the intersubjective Base Space. In a QUALIFYING Construction, finally, both the TOPIC NP and the qualifying predicate have been syntactically integrated into the matrix clause, which signals their complete semantic dependence on the main-clause SUBJECT.

The FINITE OPINION, NON-FINITE OPINION and QUALIFYING Constructions thus contrast along two parameters, which are illustrated in figure 26.

Figure 26: Functional map of qualifying constructions



On the horizontal dimension, the constructions differ as to whether the TOPIC is viewed from the intersubjective Base Space or from the point of view of the SUBJECT in the Subjective Space. The FINITE OPINION Construction typically gives information on the TOPIC that is independent of the SUBJECT's personal view of it, while the NON-FINITE OPINION and the QUALIFYING Constructions usually provide information that is based on the SUBJECT's experience with the TOPIC. The vertical dimension distinguishes various degrees to which the qualification can be transferred from the Subjective Space into the Base: both the FINITE OPINION and the NON-FINITE OPINION Constructions essentially indicate that the judgement made on the TOPIC could be intersubjectively valid. The degree of certainty also crucially depends on the choice of the main verb, however: the transfer of the judgement from the Subjective Space into the Base Space is much more limited in the sentences *I find that John is attractive* and *I consider John to be competent* than in the statements *I believe that John is a teacher* and *I know John to be a competent teacher*. Since the QUALIFYING Construction treats the judgement made on the TOPIC as the SUBJECT's idiosyncratic view, the intersubjective validity of this judgement is typically strongly restricted. While the two factors isolated here help to distinguish prototypical instances of the qualifying patterns, they must be seen as forming a continuum that admits many untypical instances as well. Unlike the discrete functional maps drawn up for resultative/motion constructions and depictive constructions (cf. tables 12 and

13), the functional maps for qualifying constructions grade into one another along the two parameters. The overlapping nature of these constructions also explains why a particular mental verb is not exclusively found in one qualifying pattern or the other, but only shows a certain tendency to occur prototypically in one (or two) of these patterns.

The empirical correctness of the horizontal parameter, which determines the various degrees to which the TOPIC is dependent on the personal views of the SUBJECT, can be supported by a closer look at the referential properties which TOPIC NPs have in the FINITE OPINION Construction as opposed to the NON-FINITE OPINION and the QUALIFYING Constructions. In the latter two constructions, the TOPIC is usually a definitely referring, frequently human or at least concrete entity. While a vaguely referring pronoun such as *there* is found in 116 out of 1,198 sentences (9.7%) of the FINITE OPINION Construction after *believe* (298a), *there* occurs in only 6 out of 268 instances (2.2%) of the NON-FINITE OPINION Construction after *believe* (298b); the QUALIFYING Construction does not tolerate existential *there* at all (298c) (cf. 5.2.2).

(298) a. Many people believe that **there** are schoolrooms and football grounds where civilized order is forever on the verge of breaking down (BNC ECN: 8).
b. Newsom accepted the tripartite system, believing **there** to be different levels of natural ability in children (BNC H8D: 185).
c. *Newsom considers **there** different levels of natural ability in children.

In addition, Borkin argues that sentences with indefinite or generic TOPICs are less acceptable in the NON-FINITE OPINION Construction and the QUALIFYING Construction than in the FINITE OPINION Construction (299) (1984: 33, 44-7). This assessment is largely buttressed up by native-speaker evaluations, although the differences between the FINITE OPINION and the NON-FINITE OPINION Constructions in the first two sentences (299a vs. a' and b vs. b') are not very pronounced.

(299) a. The public believes **that a lot is wrong** with our system of government. (ROS: 5)
a'. The public believes **a lot to be wrong** with our system of government. (ROS: 20)
a". ?The public considers **a lot wrong** with our system of government. (ROS: 50)
b. I believe **that any beaver is** a lot smarter than any domestic pet. (ROS: 13)
b'. I believe **any beaver to be** a lot smarter than any domestic pet. (ROS: 22)
b". ?I regard **any beaver as** a lot smarter than any domestic pet. (ROS: 32)
c. We believe that **the littlest thing** is irritating to him. (ROS: 14)
c'. ?We believe **the littlest thing** to be irritating to him. (ROS: 33)
c". ??We regard **the littlest thing as** irritating to him. (ROS: 55)
(adapted from Borkin 1984: 45-6)

The independence of the TOPIC from the personal views of the SUBJECT in the FINITE OPINION Construction is also borne out by the fact that *that*-clauses allow not only referentially transparent (*de re*), but also referentially opaque (*de dicto*) readings. A referentially opaque reading relates the SUBJECT to a *dictum*, i.e. a proposition that can contain indefinitely referring NPs, while a transparent reading relates the SUBJECT to a *res*, a definitely referring individual

that her belief is about (cf. Fauconnier 1997: 51-3). When the SUBJECT *Mary* knows that *her colleague* and *the Soviet spy* refer to the same person, the sentence *Mary believes that the Soviet spy is more intelligent than her colleague* would be contradictory on a transparent/*de re* reading, in which *the Soviet spy* is a definitely referring entity for the SUBJECT Mary. However, when Mary is not aware of the referential identity between the definite descriptions *the Soviet spy* and *her colleague*, the sentence *Mary believes that the Soviet spy is more intelligent than her colleague* is not contradictory on an opaque/*de dicto* reading, in which *the Soviet spy* does not, for Mary, refer to a specific person. In an opaque reading, there is thus no direct relationship between the SUBJECT *Mary* and the TOPIC *the Soviet spy*. On the other hand, sentences such as *Mary believes the Soviet spy to be more intelligent than her colleague* and *Mary considers the Soviet spy more intelligent than her colleague* are by necessity contradictory because they allow only a transparent interpretation in which the referential properties of the *Soviet spy* are determined for the SUBJECT. The NON-FINITE OPINION and the QUALIFYING Constructions do not admit of an opaque reading in which the TOPIC NP is not definitely referring; both constructions presuppose a direct, *de re* semantic relationship between the SUBJECT and the TOPIC. To put the matter another way: the potentially indefinite referential properties of the TOPIC in the FINITE OPINION Construction indicate "a dyadic relation of belief between a believer and a proposition", while the necessarily definite referential properties of the TOPIC in the NON-FINITE OPINION and the QUALIFYING Constructions suggest a "triadic relation of belief among a believer, an object, and an attribute" (Quine 1971: 104). An opaque reading is impossible in a triadic belief-relation, in which the SUBJECT is directly related to the TOPIC (cf. Borkin 1984: 48-9).

A related piece of evidence comes from the different scope properties of the existential quantifier in the FINITE OPINION Construction and the QUALIFYING Construction, which have already been illustrated in 6.2. The examples are repeated here for convenience (300). Since the scope properties of a quantifier in the NON-FINITE OPINION Construction are less clear, I will not discuss them here (see Borkin 1984: 34; Suzuki 1991: 29).

(300) a. Mary believes that someone is angry at John.
a'. Mary believes ∃x [x is angry at John].
a". ≠ ∃x [Mary believes x is angry at John].
b. Mary considers someone angry at John.
b'. = ∃x [Mary considers x angry at John].
b". ≠ Mary considers ∃x [x is angry at John].

A quantifier in the FINITE OPINION Construction typically takes narrow scope over the subordinate proposition, while it takes wide scope over the whole sentence in the QUALIFYING Construction. The different scope properties need not be attributed to a complicated mechanism of

quantifier raising and SC-restructuring (cf. 6.2), but can be given a straightforward explanation in terms of the referential requirements of the TOPIC NP: there is no personal relation between the SUBJECT and the TOPIC in the FINITE OPINION Construction, so the reference of the quantifier can remain indeterminate (opaque interpretation). In (300a), therefore, Mary does not have a specific person in mind, but only believes that there is at least one person that is angry at John. Since the qualification of the TOPIC in the QUALIFYING Construction is dependent on the SUBJECT's personal view of the TOPIC, the reference of the TOPIC must be determined in this construction. As a consequence, (300b) indicates that Mary has a particular individual in mind who she has an opinion about (transparent interpretation; cf. Quine 1971: 101-3).[171] To sum up: while the FINITE OPINION Construction, which expresses a relation between a SUBJECT and a proposition, tolerates indefinitely or vaguely referring TOPIC NPs such as *there*, *a lot*, *any beaver*, *the littlest thing* as well as narrow-scope quantifiers and referentially opaque definite descriptions, the NON-FINITE OPINION Construction and the QUALIFYING Construction, which denote a direct relation between the SUBJECT and the TOPIC-entity, require the TOPIC to be a definitely referring NP.

That the mental spaces drawn up for the three qualifying constructions in English are somewhere along the right lines is also supported by cross-linguistic evidence from French (Fauconnier 1997: 95) and Spanish (Mejías-Bikandi 1996: 158-72). The divergent accessibility conditions between the Base Space and the Subjective Space that are created by different syntactic constructions in English are rendered by mood in French and Spanish. To give an example from Spanish: the expression *tal vez* ('maybe') sets up a Possibility Space relative to the Base Space, which represents the discourse participants' shared view of reality. When the verb is in the indicative as in (301a), the speaker suggests that he knows that the man he is talking about has a son, so this presupposition can be transferred into the Base Space. When the verb is in the subjunctive mood (301b), however, the speaker only sets up a hypothetical situation; thus, the hearer cannot assume that the speaker knows the man he is talking about and that this man really has a son (Mejías-Bikandi 1996: 159-61). The subjunctive in Spanish consequently closes off the Possibility Space from the intersubjective Base Space, whereas the indicative allows elements from the Possibility Space to transfer into the Base Space (for examples in which the indicative allows elements from the Base Space to transfer into the Possibility Space, whereas the subjunctive makes this transfer problematic, see Mejías-

[171] The different scope properties become more easily apparent when we use a different matrix verb and a different quantifier. In the sentence *The teacher proved that none of the students is dishonest*, the quantifier only has scope over the subordinate clause (the teacher has no specific students in mind), while it has scope over the ma-

Bikandi 1996: 166-70). While the Spanish constructions Mejías-Bikandi deals with are functionally different from the English constructions under investigation here, the semantic mechanisms that are at work are very similar: like the subjunctive in Spanish, the English QUALIFYING Construction presents judgements that are dependent on the idiosyncratic views of the speaker and cannot freely be adopted into the intersubjective Base Space.

(301) a. Tal vez su hijo está en la cárcel.
'Maybe his son is-IND-in jail.'
b. Tal vez su hijo esté en la cárcel.
'Maybe his son is-SUBJ in jail.' (from Mejías-Bikandi 1996: 159-60)

11.4 A semantic explanation of syntactic and stylistic differences between qualifying patterns

To put the mental-space account on a more empirical footing, I will examine the behaviour of the qualifying patterns along a number of empirically observable syntactic and semantic parameters:

> Dependent qualifying constructions constitute a syntactic variable in the best sense of the word, with a set of equivalent variants that can be analyzed quantitatively and correlated with independent categories, internal or external variable constraints. (Schneider 1997: 48)

On the assumption that syntactic form is a reflection of underlying meaning, it should be possible to interpret syntactic differences between the qualifying patterns as systematically deriving from semantic motivations. Each of the following six subsections focuses on one stylistic or syntactic variable and compares the behaviour of the qualifying patterns with respect to this variable. I will attempt to account for these differences in a tightly interlocking fashion by appealing to the mental-space configurations presented above. If such a unified explanation of surface distinctions becomes feasible, this can also be seen as supporting the mental-space account given for the FINITE OPINION Construction (SUBJECT + matrix verb + *that*-clause), the NON-FINITE OPINION Construction (SUBJECT + matrix verb + NP inf XP), and the QUALIFYING Construction (SUBJECT + matrix verb + NP (*as*) XP) from an empirical point of view.

11.4.1 Stylistic differences

11.4.1.1 The data

This section considers *that*-clauses, NP inf XP, NP XP and NP *as* XP as carriers of potentially differing stylistic significance. Stylistic distinctions must be assumed "when higher or lower scores of a variable are directly correlated with higher and lower positions on a scale of for-

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trix proposition in *The teacher proved none of the students* (*to be*) *dishonest* (the teacher has specific students in mind).

mality of the context" (Lavandera 1978: 172). Studies of this kind have been most successful with phonologically variant forms (Lavandera 1978: 175). The problem with alternative syntactic structures is that they — unlike variable phonetic forms — are likely to differ semantically as well. The analyst consequently faces the problem that "non-phonological variables are defined so that even when they do carry social and stylistic significance, they also have referential meaning, although this *referential meaning is held to be the same for all variants*" (Lavandera 1978: 176; see also Feagin 2002: 23-4). If one makes it a precondition of a study of stylistic differences that the variant forms must share identical meaning, such a study could not be reasonably conducted on the level of syntax because a given pair of sentences is practically never synonymous. To make a stylistic examination of syntactic constructions feasible, Lavandera proposes "to relax the condition that the referential meaning must be the same for all the alternants and substitute for it a condition of functional comparability" (1978: 181). On this basis the frequencies of the four qualifying patterns can be compared on a scale of formality even if they are semantically not equivalent.

Table 19 compares the relative frequency of *that*-clauses and the NP inf XP-pattern (both after *believe*) across text categories. No major stylistic distinctions become evident (compare the low φ-value), with most registers not exhibiting a significant departure from the average 3:1 ratio between *that*-clauses and the infinitival pattern. There are only two minor exceptions: *that*-clauses are relatively more frequent than NP inf XP-sentences in spoken registers (and in imaginative texts, which include many dialogue sections), while the NP inf XP-pattern is slightly overrepresented in very formal written registers (belief and thought and, particularly, natural and pure science).

Table 19: Frequency of *that*-clauses and NP inf XP after *believe* across text categories

	***that*-clause**	**NP inf XP**	**Σ** (text categories)
natural and pure science	232 (277.5) χ^2=**7.5**	131 (85.5) χ^2=**24.2**	363
applied science	324 (328.7) χ^2=**0.1**	106 (101.3) χ^2=**0.2**	430
social science	308 (303.5) χ^2=**0.1**	89 (93.5) χ^2=**0.2**	397
belief and thought	203 (233.2) χ^2=**3.9**	102 (71.8) χ^2=**12.7**	305
commerce and finance	312 (314.2) χ^2=**0.02**	99 (96.8) χ^2=**0.1**	411
world affairs	357 (353.9) χ^2=**0.03**	106 (109.1) χ^2=**0.1**	463
arts	259 (250.7) χ^2=**0.3**	69 (77.3) χ^2=**0.9**	328
leisure	279 (273.7) χ^2=**0.1**	79 (84.3) χ^2=**0.3**	358
imaginative	166 (144.5) χ^2=**3.2**	23 (44.5) χ^2=**10.4**	189
spoken	208 (168.2) χ^2=**9.4**	12 (51.8) χ^2=**30.6**	220
Σ (constructions)	2,648	816	***n***=3,464

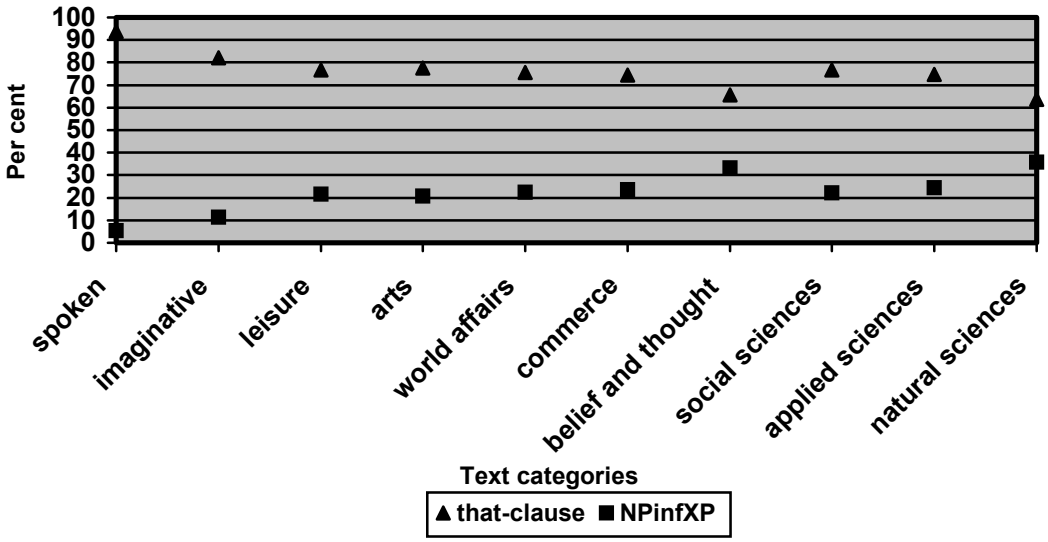
χ^2=104.4; df=9; highly significant at p<0.001; φ=0.17

These results are unspectacular because it is widely known that *that*-clauses after verbs expressing personal attitudes such as *believe* and *think* are very common in conversation (Biber *et al.* 1999: 666-9), while the NP inf XP-pattern after mental verbs is a less frequent and more formal construction (Altenberg 1993: 229-30; Biber *et al.* 1999: 698-9; Hornby 1954: 22-3; Mair 1990: 175). The following sentence pair offered by Bolinger nicely illustrates the fact that the NP inf XP-pattern is more at home in formal than in colloquial contexts:

(302) a. I believe these facts to have proved accurate.
b. ?I believe these facts to have checked out 100%. (from Bolinger 1967a: 51)

Nevertheless, the relative frequencies between the finite and the infinitival patterns (expressed in per cent figures) do not differ considerably from register to register, with *that*-clauses normally making up 70-80 per cent of all instances, and NP inf XP accounting for 20-30 per cent. It is only in spoken texts that NP inf XP drops below the 10-per-cent margin, and in very formal text categories that it accounts for about a third of all cases (figure 27).

Figure 27: Relative frequencies of *that*-clauses and the NP inf XP-pattern across text categories



To ascertain data about the relative frequencies of NP inf XP, NP XP and NP *as* XP across registers, I conducted a corpus study with the verb *consider*, which can be combined with all three patterns. The results are displayed in table 20: the relative frequencies of the three patterns are again quite constant across text categories (observe the low φ-value); NP XP-sentences are found more often than expected in imaginative texts, while the NP inf XP-pattern is overrepresented in the natural-and-pure-science category. The observed frequencies for the NP *as* XP-pattern are slightly higher than the expected frequencies in the registers of natural and pure science and social science.

Table 20: Frequency of NP inf XP, NP XP and NP *as* XP after *consider* across text categories

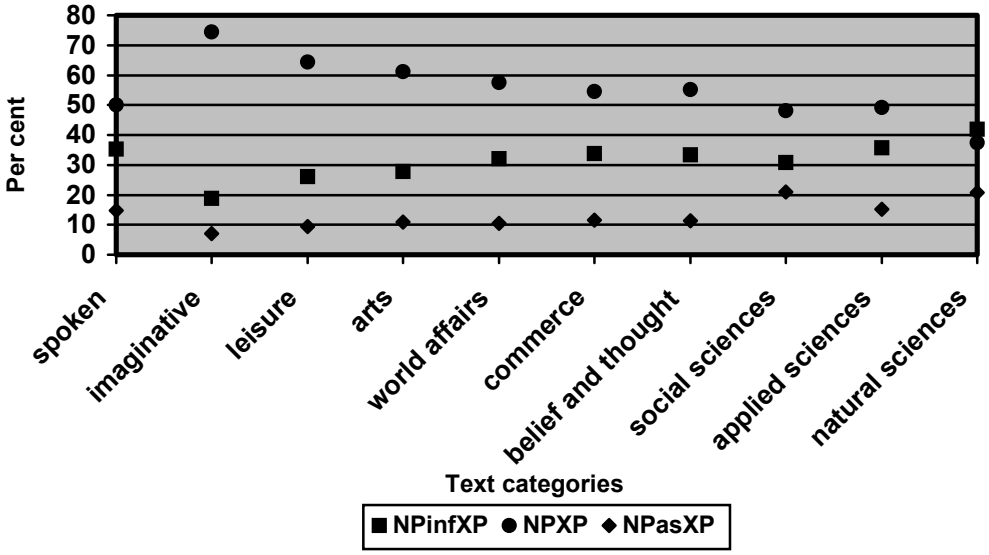
	NP inf XP	**NP XP**	**NP *as* XP**	**Σ** (text categories)
natural and pure science	93 (68.9) χ^2=**8.4**	83 (124.6) χ^2=**13.9**	46 (28.5) χ^2=**10.7**	222
applied science	106 (92.1) χ^2=**2.1**	146 (166.7) χ^2=**2.6**	45 (38.2) χ^2=**1.2**	297
social science	77 (77.3) χ^2=**0**	120 (139.8) χ^2=**2.8**	52 (32) χ^2=**12.5**	249
belief and thought	99 (92.1) χ^2=**0.5**	164 (166.7) χ^2=**0.04**	34 (38.2) χ^2=**0.5**	297
commerce and finance	64 (58.6) χ^2=**0.5**	103 (106.1) χ^2=**0.09**	22 (24.3) χ^2=**0.2**	189
world affairs	99 (95.9) χ^2=**0.1**	178 (173.4) χ^2=**0.1**	32 (39.7) χ^2=**1.5**	309
arts	102 (113.6) χ^2=**1.2**	224 (205.4) χ^2=**1.7**	40 (47) χ^2=**1**	366
leisure	83 (98.4) χ^2=**2.4**	204 (177.9) χ^2=**3.8**	30 (40.7) χ^2=**2.8**	317
imaginative	51 (84.7) χ^2=**13.4**	203 (153.2) χ^2=**16.2**	19 (35.1) χ^2=**7.4**	273
spoken	64 (56.5) χ^2=**1**	91 (102.2) χ^2=**1.2**	27 (23.4) χ^2=**0.6**	182
Σ (constructions)	838	1,516	347	***n***=2,701

χ^2=110.4; df=18; highly significant at p<0.001; φ=0.2

Figure 28 demonstrates that the relative frequencies of the three non-finite/verbless qualifying patterns behave similarly across text categories, with the exception of imaginative texts, which show a disproportionately high number of NP XP-sentences, and the category of natural and pure science, which clearly favours the NP inf XP-pattern at the expense of NP XP.[172]

[172] Similar results could be replicated with other verbs as well. *Find*, for which the NP XP-pattern is the prototypical construction, occurs in imaginative texts much more often than expected. The NP *as* XP-pattern after *regard* is equally distributed across text categories, with slight peaks in world affairs, commerce and finance, belief and thought and social sciences.

Figure 28: Relative frequencies of NP inf XP, NP XP and NP *as* XP across text categories



11.4.1.2 A mental-space explanation

The stylistic differences between the qualifying patterns are not very pronounced. The FINITE OPINION Construction is more frequent than the NON-FINITE OPINION Construction in all text categories and particularly in spoken texts because it can be used to present a SUBJECT's opinion on any state of affairs and with any degree of commitment to the validity of the attitude expressed (303a, a'). The NON-FINITE OPINION Construction is restricted to the special case that a rational judgement depends on the personal relation between a SUBJECT and a TOPIC; moreover, the SUBJECT is usually convinced that anyone with her experience would arrive at the same conclusion. Such contexts seem to occur most typically in scientific text categories in which a SUBJECT presents a judgement that depends on her long-standing experience with the TOPIC (303b). The bare QUALIFYING Construction is significantly overrepresented in imaginative texts, which could be due to the fact that this text type frequently includes characterisations from the subjective point of view of the narrator or another fictional character (303c); at the same time, it is significantly underrepresented in scientific registers because the idiosyncrasy of the opinion expressed by it (especially after a matrix verb such as *find*) is not compatible with the conventions of this text category. It is difficult to present any stylistic generalisations for the *AS*-QUALIFYING Construction because the degree of rationality expressed by it depends largely on the main verb used (cf. 11.2.3).

(303) a. If your looking for love and your absolutely desperate there's always a thing called date line **which I believe is very successful** and I know at least two people who've got very happy marriages from that. (BNC FLB: 211).
a'. But **I think Ibrahim's OK** (BNC A74: 47).

b. As it happens, neither this mechanism, nor that found in Dendrocoelum, bears much resemblance, even by analogy, to plant tropisms, or to **the mechanism Loeb believed to underlie animal orientation**. (BNC AE7: 1070).
c. They were taken deeper into that neighbourhood and Eleanor wrote to her sister Laura in Paris that **she considered New York a 'very dirty, shoddy town'** (BNC A0U: 2415).

11.4.2 Syntactic complexity

11.4.2.1 The data

One major factor distinguishing *that*-clauses from the other three qualifying patterns is complexity. While a *that*-clause can easily be elaborated by adverbials and further subordinate structures, both non-finite clauses and NP (*as*) XP-structures are less tolerant of additional syntactic material (Mair 1990: 187). The first line of table 21 provides the average number of words in *that*-clauses (after *believe*), NP inf XP-structures (after *believe*) and NP XP-patterns (after *consider*), each based on a sample of 240 sentences. On average, *that*-clauses contain more words than non-finite clauses by a third, and they are twice as long as the NP XP-pattern.[173] More interesting than the mean pattern length is the variability of the scores within the three data sets, i.e. whether the observed lengths are all very close to the typical length or whether they are considerably scattered above and below the mean. The second line of the table therefore presents the standard deviation for each pattern[174]; the values demonstrate that the length of *that*-clauses is much more variable than that of the other two patterns, which are more uniformly spread around the mean. To put the matter another way, individual *that*-clauses vary considerably in length and can be relatively long, whereas the sentences in the other two patterns are typically short: while 76 *that*-clauses contain 15 words or more, this is the case with only 21 instances of the NP inf XP-pattern, and 14 of the NP XP-pattern.

Table 21: Average length of *that*-clauses, NP inf XP and NP XP

	***that*-clause** (after *believe*)	**NP inf XP** (after *believe*)	**NP XP** (after *consider*)
average length (in words)	12	8	6
standard deviation	8.3	4.8	4.9

[173] Since every sentence in the NP inf XP-pattern also contains an infinitive (*John believes Mary **to be** intelligent*), the fact that this pattern is, on average, two words longer than the verbless NP XP-structure (*John considers Mary intelligent*) can be directly attributed to the infinitival form.
[174] The standard deviation has been calculated with the following formula (Oakes 1998: 7):

$$\sqrt{\frac{\sum (x-\bar{x})^2}{N-1}}$$

(304a) illustrates an average *that*-clause comprising 12 words, and (304b) an average NP inf XP-pattern with 8 words. While a *that*-clause with 28 words (304c) is not too unusual, 28 words are highly untypical for NP inf XP (304d).

(304) a. There are some people who believe **that the future of books and magazines for recording information is bleak** (BNC APX: 261).
b. IGNORED our plea for him to address the 'Southgate Semiotics Society' — a body concerned with discussing the most poignant examples of what we believe **to be ironic, individualist/regionalist and deconstructionist English** (BNC BNS: 990).
c. I am afraid I am cynical enough to believe **this is just another round of a giant game of poker, where the only thing that will matter in the end will be the size of the cheque** (BNC A04: 143).
d. Thomson believes **this code compiled approach to be a major advantage of the fuzzy TECH system, and one of the most important factors in the decision to team with Inform GmbH** (BNC CPS: 48).

It is necessary to consider more fine-grained data in order to determine some common sources for the greater complexity of *that*-clauses vis-à-vis the NP inf XP-pattern (similar remarks hold for NP (*as*) XP). While roughly 18% of all *that*-clauses contain an additional subordinate or coordinate clause (305a, b), only about 3% of all NP inf XP-patterns include another clause (305a', b'). What is more, some *that*-clauses are made up of conjuncts with different TOPIC NPs (305c), something that is not normally possible for NP inf XP (305c'). In addition, adverbial subordinate clauses, which are frequently found inside *that*-clauses (305d), do not usually occur with NP inf XP because this pattern does not seem to tolerate independent modification (305d').

(305) a. I happen to believe that the fears **that have been voiced on that account** are exaggerated (BNC HHW: 11961).
a'. Per Andersen of IDC's European Unix Expertise Centre believes this to be a significant trend **that will shape the industry over the next two years** (BNC CP5: 190).
b. The problem was still his mother and the prefectural doctors, who continued to believe **that he was schizophrenic and should be hospitalized** (BNC HH3: 6952).
b'. So, Blacklock still believes **her to be married and living the good life**? (BNC FPK: 371)
c. We all know intuitively that if someone firmly believes **they are inadequate and worthless, that the world is a rotten place and that life is full of suffering**, then they will not have a joyous, exuberant and loving life (BNC CA5: 261).
c'. ?John believes **himself to be inadequate and the world to be a rotten place**.
d. Some of the notable protagonists in the debate are John and Nuala Scarisbrook, of the 'Life' organisation, who believe that all abortion is wrong **because life begins at conception** (BNC ANA: 728).
d'. ?Some people believe abortion to be wrong **because life begins at conception**.

By the same token, while parentheticals and adverbials occur in about 6% of all FINITE OPINION Constructions (306a, b), fewer than 1% of the NON-FINITE OPINION Construction include a parenthetical phrase (306a'); an adverbial modifying the non-finite clause is not normally felicitous at all (306b').

(306) a. Professor Lear believes that individuation and autonomy are the highest goals of Man and he also believes**, along with Socrates,** that the unexamined life is not

worth living (BNC AHG: 537).
a'. [I]f the Secretary of State has reasonable cause to believe**, for example,** a person to be of hostile origin, he may imprison him (GU6: 1672).
b. It is just that I believe they are **probably** more rare than is claimed (BNC C9W: 1322).
b'. ?I believe them to be **probably** more rare than is claimed. (ROS: 41)

Two points are worth noting here: first, *that*-clauses are, on average, considerably longer and more complex than the other qualifying patterns; second, only *that*-clauses can be independently modified, whereas an adverbial phrase or clause cannot obviously take scope over a non-finite or verbless pattern (cf. 5.2.1). Thus, while an adverbial can modify either the main or the subordinate proposition of a *that*-clause construction (307a), an adverbial may only modify the main clause in the other qualifying constructions, but not the NP (inf/*as*) XP-string (307b) (cf. Steever 1977: 596-7).

(307) a. John **firmly** believes that Mary is a genius **for sure**.
a'. John **firmly** believes Mary to be a genius (??**for sure**).

A related observation equally lends support to the claim that NP (inf/*as*) XP-strings cannot be independently modified. It has frequently been acknowledged that only *that*-clauses, but not non-finite clauses — let alone NP (*as*) XP — can include a modal auxiliary (Dixon 1991: 223; Mair 1990: 188; Noël 1997: 271). Of the 4,431 instances of *that*-clauses after *believe* extracted from the BNC, 1,640 sentences (37%) contain some modal auxiliary. (308) provides examples with the epistemic modal *may*, the emphatic modal *do*, and the future auxiliary *will*, respectively. None of these modal meanings can be rendered by non-finite or verbless qualifying patterns.[175]

(308) a. Economists believe that the boost to the labour force **may** be worth an additional 1 per cent a year in the early 1990s (BNC A7V: 47).
b. "But the day I wrote this song I honestly believed that I **did** love everyone!" insists Paul, chirpily (BNC CAE: 1492).
c. I believe that one day Manchester United **will** again win the league title (BNC A2K: 123).

Negation data also serve to underline this point: while *that*-clauses commonly occur in negated form (309a, a'), negation in the NP inf XP-pattern is uncommon and frequently sounds odd (309b). In the few cases where the negator *not* is found in the non-finite pattern, it typically carries contrastive stress and exclusively takes scope over the infinitival constituent (309c, c'). Similarly, negation in NP (*as*) XP-patterns is usually only possible in the form of

[175] Non-finite clauses after *believe* cannot normally express future reference (Higuchi 1999: 130). There are a few ways around this restriction, though, such as the immediate future denoted by *on the point of*:

Apart from the fact that she believed her teeth **to be on the point of falling out**, she had not had her period for several weeks and was afraid that she was barren (BNC EFW: 1333).

constituent negation with contrastive stress (309d, d' and e, e'; cf. 5.3.3). When no contrast is implied, the XP must be negated by morphological means (309f).

(309) a. I knew I was**n't** attractive, and I didn't help myself by dressing like a young fogey in tweed sportsjackets (BNC FR3: 785).
a'. In the light of the facts which emerged subsequently, he believed that Evans' execution was **not** justified and that a mistake had been made (BNC EEC: 939).
b. ??He believed Evans' execution **not** to be justified.
c. However, its existence was never firmly established, and today it is believed **nót** to exist (BNC GW6: 1142).
c'. "At first I thought it was rubbish ..." The implication, of course, is that Mr Bowen now considers it **nót** to be 'rubbish' (BNC BNS: 191).
d. He considered the Shah **an autocrat, not a dictator** (BNC G3R: 2151).
d'. John Paul II will be judged **not the healer of a divided Church, but the gravedigger of Pope John's aggiornamento** (BNC CRK: 198).
e. Either way, astronomers are regarding it as **a fascinating astronomical object and not just a recordbreaker** (BNC B78: 382).
e'. He thus suggested that ideas should be viewed **not as mirrors of reality but plans of action** (BNC EAJ: 966).
f. Since convention in Britain establishes that acts of parliament are law, a British judge must enforce even acts of parliament he considers **unfair** or **unwise** (BNC JXJ: 40).

11.4.2.2 A mental-space explanation

The FINITE OPINION Construction expresses a relation between a SUBJECT and a proposition that provides a unit of information believed by the SUBJECT. Since the proposition is profiled as a whole and syntactically put into relief by an independent subordinate clause, the number of words it contains is not constrained by any semantic factors, which accounts for the variable lengths of *that*-clauses after *believe* and the fact that *that*-clauses frequently include additional subordinate or coordinate clauses (cf. 305a, b, d). Both the NON-FINITE OPINION and the QUALIFYING Constructions profile a relationship between a SUBJECT and a TOPIC, though. The (inf/*as*) XP-string does not therefore provide an isolated, detached predication, but a predication that is dependent on the SUBJECT's view of the TOPIC. This predication is not only semantically backgrounded relative to the SUBJECT-TOPIC relation, but is also syntactically more "adjunct-like" (Borkin 1973: 54) in that it is realised only by a non-finite verb or no verb at all. As a result, the string following the TOPIC is usually rather short in these constructions and does not normally contain another subordinate or coordinate clause (cf. the rare cases illustrated by 305a', b' and d').

Furthermore, since the FINITE OPINION Construction profiles a relation between a SUBJECT and a proposition, a *that*-clause can also contain several independently qualified TOPICS (cf. 305c), while the other qualifying constructions, which profile a relation between a SUB-

JECT and a TOPIC, typically only present judgements made on a single TOPIC.[176] The TOPIC, which serves as the target of the SUBJECT's belief, is in an informationally salient position in the NON-FINITE OPINION and the QUALIFYING Constructions, and a single sentence does not normally tolerate more than one information focus (cf. the restriction against several figure properties in the DEPICTIVE Construction; 10.1).[177]

Most importantly, only the dependent proposition in the FINITE OPINION Construction can be independently modified by an adverbial or a modal auxiliary (cf. 306b, 308), while the NP (inf/*as*) XP-strings do not usually tolerate any independent modifying element (cf. 306b'). The truth value of an informationally detached proposition can be freely modified; a proposition that is dependent on the personal judgements of the SUBJECT, on the other hand, is already epistemically marked in quite a specific way, and the 'adjunct-like' predication is therefore not independent enough to allow any additional modification. By the same token, a SUBJECT may not only have a belief about a positive, but also about a negative proposition (cf. 309a, a'). It is highly unusual, however, that a SUBJECT makes a negated judgement about a TOPIC (??*I believe John not to be intelligent*); instead, the SUBJECT will highlight a positive or a negative characteristic of the TOPIC (*I believe John to be intelligent/unintelligent*).

Finally, the judgement expressed in a QUALIFYING Construction is marked as subjective and idiosyncratic by the construction as such. Any additional modification of the truth value of the qualification (??*I consider Mary probably intelligent*) would be semantically incompatible with this construction: the QC presents a judgement from the point of view of the speaker and does not imply that the judgement is to float back to the Base Space; a modifier, however, would measure the degree of certainty of the qualification against an intersubjectively valid external scale. For the same reason, a discourse participant would be more likely to modify or question the validity of a *that*-clause in a conversation than the validity of an NP XP-structure (310). A more appropriate reply to (310b) would therefore be a surprised *You do?* (Augustus Cavanna, p.c.).

(310) a. A: I believe that Mary is intelligent.
B: She may be intelligent, but her test results don't prove that./ No, she isn't. Look at her test results!
b. A: I consider Mary intelligent.
B: ??She may be intelligent, but her test results don't prove that./ ??No, she isn't. Look at her test results!

[176] The fact that the NON-FINITE OPINION Construction profiles a relation between the SUBJECT and the TOPIC also explains the paucity of parenthetical expressions between the matrix verb and the TOPIC (cf. 306a'), as this would divert attention away from the SUBJECT-TOPIC relation.

[177] Sentences such as *I consider this man an idiot and that man a genius* are felicitous because the focus here is on the contrast between the qualities of the two TOPICS (cf. 5.2.1).

11.4.3 Tense and aspect

11.4.3.1 The data

Besides their more limited complexity and their lack of independent modification, non-finite and verbless qualifying patterns are also known to be less versatile with respect to tense/aspect-distinctions. It has become a commonplace for scholars that non-finite clauses after mental verbs are characteristically stative (Borkin 1984: 61; Kilby 1984: 154; Mair 1990: 175; Menzel 1975: 105-6). This assumption can be empirically bolstered up by a comparison of the verb forms in finite *that*-clauses after *believe* and in the NP inf XP-pattern after *believe* and *consider*.[178] The single most frequent verb in both *that*-clauses and non-finite clauses is *be*; nevertheless, there are considerable differences: while 1,198 out of 2,791 (42.9%) *that*-clauses contain a form of *be* (311a, a'), no fewer than 241 out of 268 (89.9%) and 299 out of 326 (91.7%) non-finite clauses after *believe* and *consider*, respectively, have *to be* as their predicate (311b, b').[179]

(311) a. The recent series of disasters from The Herald of Free Enterprise onwards, has led us to believe that Britain **is** particularly unsafe (BNC A3B: 84).
a'. So he supported reunion with Methodists and believed that it **was** Canute-like to oppose the ordination of women (BNC A4J: 101).
b. Supporters of the free movement of capital believe it **to be** of benefit to all countries (BNC CE8: 217).
b'. [T]he early doxographic writers considered him **to be** second-rate and more or less ignored him (BNC BM8: 1045).

The proportion of *to be* in the NP inf XP-pattern is so high that some linguists have claimed that this is the only verbal form possible in this construction (Watts 1983: 67). This conclusion is too strong, though. Non-finite clauses also sometimes tolerate perfective infinitives: 11 out of 268 infinitives after *believe* (4.1%), and 12 out of 326 infinitives after *consider* (3.7%) include a perfective verb form (312a); again, however, half of the instances are represented by perfective *be* (312a'). This proportion of perfective infinitives is rather low compared to the number of verbs in *that*-clauses which temporally precede the matrix verb (575 out of 2,791 instances, i.e. 20.6%; only a fifth of these cases contain a past or perfective form of finite *be*) (312b, b').

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[178] Since modal auxiliaries are exclusive to *that*-clauses, only those 2,791 *that*-clauses after *believe* (from the sample of 4,431) that do not contain a modal have been integrated into this comparison. As we will see later (11.4.5.2), non-finite clauses after the passive forms of *believe* and *consider* constitute a functional pattern of their own, so this section is only based on the 594 non-finite clauses after the active forms of *believe* and *consider*.

[179] Included in these numbers are only those forms of finite or non-finite *be* that have the same (relative) tense as the matrix verb. Forms of *be* that temporally precede the matrix verb (such as *I believe that Britain **was** unsafe in the Middle Ages* and *I believe Britain **to have been** unsafe in the Middle Ages*) are included in the count of past/perfective infinitives (see 312a', b').

(312) a. Who considers those persons **to have been involved** in abuse or attempted abuse of the immigration laws? (BNC B7M: 176)
a'. She had informed Elizabeth Mowbray of the girls' exchange of identities — information which the duchess had received thankfully, believing the exchange **to have been** necessary for Anne's safety (BNC CCD: 1647).
b. He believed that Peter's reforms **had disrupted** society by creating a Western-type bourgeoisie (BNC A18: 163).
b'. The PCA may believe the use of horses **was** 'perfectly proper' (A88: 509).

It has been persuasively argued that the perfect makes the verb stative because a perfect form denotes the state that has resulted from the verb's activity (Bolinger 1974: 73; Noël 1997: 272, footnote 4). Indeed, perfective infinitives that do not allow a stative interpretation are generally ruled out; the following sentence has been unanimously rejected by my informants:

(313) *I know the president **to have accepted this proposal**.

Stativity also seems to play a key role in the few passive infinitives after *believe* (8 out of 268, i.e. 3%) and *consider* (4 out of 326, i.e. 1.2%). All of these passives can be argued to characterise the direct object (314a, a') (cf. Higuchi 1999: 131-2), and passives that do not possess a characterising function are much less felicitous (314b, b'). Finite *that*-clauses, by contrast, contain a higher proportion of passives (204 out of 2,791 instances, i.e. 7.3%), with the passive verbs being both stative and dynamic (314c, c').

(314) a. If Cadwallon believed himself **to be descended** from a Votadini chieftain, he ... (BNC G0G: 167).
a'. They do not discuss clearly whether in class society they consider all aspects of cognition **to be moulded** by false consciousness (BNC A6S: 412).
b. ?John believes Mary **to be admired** by all her students. (ROS: 41)
b'. ??John believes Mary **to have been kissed** by one of her students. (ROS: 57)
c. In other words they believe that sexism in this instance **is built** on some 'natural' foundation (BNC CGF: 688).
c'. I believe some **were killed**, mostly gypsies and homosexuals (BNC AK9: 762).

Stativity is also involved in the very few cases in which the NP inf XP-pattern contains a progressive infinitive (2 out of 268, i.e. 0.7%, for *believe* and 1 out of 326, i.e. 0.3%, for *consider*). The progressive form normally has a characterising function (315a); dynamic progressives, on the other hand, are much less acceptable (315b). Progressive verb forms in *that*-clauses are again more frequent (180 out of 2,791, i.e. 6.4%) and are, of course, typically found in dynamic contexts (315c). My corpus sample also includes 19 *that*-clauses after *believe* that contain passive progressive verb forms (315d), which do not have a structural correlate in the NP inf XP-pattern (315d').

(315) a. In his Nobel Prize acceptance speech, Claude Simon considered marginalized writing **to be subverting** totalitarian political control at least implicitly (BNC CRU: 626).
b. *I believe the president **to be waiting outside**. (ROS: 80)
c. They will starve to the end, because they believe rescue **is coming** by sea (BNC BP0: 685).
d. A Swindon man is preparing to go to Pakistan to try to find his girlfriend, whom he

believes **is being kept** there against her will (BNC K24: 647).
d'. *... to find his girlfriend, whom he believes **to be being kept** there against her will.

Finally, non-finite clauses only marginally tolerate simple, i.e. non-perfective, non-passive and non-progressive verbs other than *to be* (6 out of 268, i.e. 2.2%, for *believe*, and 10 out of 326, i.e. 3.1%, for *consider*); these verbs are all stative verbs with a characterising meaning, typically *to have* (316a, a'), and dynamic simple verbs are basically ungrammatical here (316b) (May 1987: 31-2; Newman 1982: 159-60).[180] This restriction is absent from *that*-clauses, which accept both characterising and non-characterising simple verbs (634 out of 2,791, i.e. 22.7%) (316c, c').

(316) a. Every person whom the applicant believes **to have** parental responsibility for the child is entitled to respondent status in all proceedings of the Act (BNC J76: 573).
a'. He was questioned by senior security officials about his teaching of the Darwinist theory of evolution which they considered **to contradict** their interpretation of the principles of Islam (BNC CJS: 520).
b. *I believe John **to bake a cake**.
c. They also believe that they **have** the right to snoop and that the shootings violate the German-Soviet treaty signed last year (BNC ABJ: 1496).
c'. No-one in their right minds would have believed that Labour **wanted** to abolish heterosexuality or promote AIDS (BNC C9S: 604).

The following table shows that tense/aspect-distinctions weigh heavily in the contrast between *that*-clauses after *believe* and the NP inf XP-string after *believe* and *consider*.

[180] It has been suggested that dynamic verbs become possible in the NP inf XP-pattern when they can be interpreted habitually (Borkin 1984: 62; Kilby 1984: 154; May 1987: 32). The examples cited (such as *I believe her to beat her children*, from Kilby 1984: 154) have generally been given poor acceptability ratings by my informants.

Table 22: Comparison of the tense/aspect-variation in *that*-clauses and the NP inf XP-pattern

	***that*-clause** (after *believe*)	**NP inf XP** (after *believe/consider*)	**Σ** (tenses/aspects)
be (same temporal reference as main verb)	1,198 (1,433) χ^2=**38.5**	540 (305) χ^2=**181.1**	1,738
other verbs than *be* (simple and progressive forms; same temporal reference as main verb; only active)	814 (686.8) χ^2=**23.6**	19 (146.2) χ^2=**110.7**	833
past/perfective verb (including *be*; only active)	575 (493.1) χ^2=**13.6**	23 (104.9) χ^2=**63.9**	598
passive verb (same temporal reference as main verb or anterior to main verb)	204 (178.1) χ^2=**3.8**	12 (37.9) χ^2=**17.7**	216
Σ (patterns)	2,791	594	***n***=3,385

χ^2=452.9; df=3; highly significant at p<0.001; φ=0.37

While the NP XP-pattern does not contain a verb, the NP *as* XP-structure can include a non-finite *–ing*-form (cf. 4.3). As table 23 demonstrates, such verbal structures are much rarer than verbless NP *as* XP-patterns; the ratio between verbless and verbal *as*-patterns is almost identical across various main verbs.

Table 23: Ratio between verbless and verbal NP *as* XP-patterns

	NP *as* XP	**NP *as* V-*ing* XP**	***n***
judge	64 **86.5%**	10 **13.5%**	74
consider	162 **86.2%**	26 **13.8%**	188
think of	78 **82.1%**	17 **17.9%**	95
view	1,115 **88.4%**	146 **11.6%**	1,261
regard	3,497 **88.6%**	451 **11.4%**	3,948

When we count the verbless NP *as* XP-pattern (in addition to the rare stylistic variant NP *as being* XP) as equivalent to structures with finite *be* in *that*-clauses and infinitival *be* in the NP inf XP-pattern, we see that the tense/aspect-options are very restricted for the NP *as* XP-pattern as well. Let us take the 3,948 cases after *regard* as an example: 3,661 instances contain the form *being* (164 sentences) or no overt verb at all (3,497 sentences), which makes up 92.7% of all cases (317a, a'); just 19 sentences (0.5%) include a perfective verb form, again frequently with the verb *be* (317b, b'), and 32 instances (0.8%) have a (perfective) passive verb

form (317c, c'). Quite a number of sentences (263, i.e. 6.4%) contain verbs other than *be*, but the large majority of these verbs expresses stative relationships. The single most frequent verb is *have* (44 instances), followed by *belong* (10), *provide* (9), *involve* (7), *represent* (6), *constitute* (5), *contribute* (5), *exist* (4), *lie in* (4), *form* (4), and *arise from* (4) (316d, d'). Non-stative verbs are, by comparison, very rare (317e).

(317) a. Although Mr Wise regards Windows as **being** in its fairly early days, he says that the firm is devising a standard configuration for Windows users on the network (BNC: CBY: 2213).
a'. John regards him as Saviour of the world and records Jesus' declaration to be the light of the world (BNC CCL: 617).
b. And the past to which you are so resolutely attached — I suppose you regard it as **having been** ideal? (BNC: AEA: 1135).
b'. [T]he Cro-Magnons, generally regarded as **having wiped out** the Neanderthal precursors, were similarly large-brained (BNC CET: 374).
c. It will look at the part played by pressure groups in the system, and it will examine the case that has been made for regarding democracy as significantly **undermined** by 'political elites' (BNC FS7: 733).
c'. Some of the cases to which I have referred suggest that the answer to the problem depends on whether or not the debtor can be regarded as **having been appointed** by the creditor to act as agent of the creditor (BNC FD3: 66).
d. In the matter of contract, drunkenness is regarded as **having** the same effect as insanity (BNC ABP: 602).
d'. [W]e do not want to regard the blue tits on the Isle of Wight as **belonging** to a different species to those on the mainland (BNC AE7: 530).
e. A person may belong to several different families during his life, and it makes little sense to regard him as **changing** identity on leaving or entering a nuclear family (BNC H9J: 937).

Table 24 illustrates that the tense/aspect-restrictions governing the NP *as* XP-pattern are highly significant vis-à-vis *that*-clauses; indeed, *as*-patterns are even more constrained in this respect than the NP inf XP-pattern (cf. the φ-values of tables 22 and 24).

Table 24: Comparison of the tense/aspect-variation in *that*-clauses and the NP *as* XP-pattern

	***that*-clause** (after *believe*)	**NP *as* XP** (after *regard*)	**Σ** (tenses/aspects)
be (same temporal reference as main verb)	1,198 (2,012.4) χ^2=**329.5**	3,661 (2,846.6) χ^2=**233**	4,859
other verbs than *be* (same temporal reference as main verb; only active)	814 (434.9) χ^2=**330.5**	236 (615.1) χ^2=**233.6**	1,050
past/perfective verb (including *be*; only active)	575 (246) χ^2=**440**	19 (348) χ^2=**311**	594
passive verb (same temporal reference as main verb and anterior to main verb)	204 (97.7) χ^2=**115.7**	32 (138.3) χ^2=**81.7**	236
Σ (patterns)	2,791	3,948	***n***=6,739

χ^2=2,075; df=3; highly significant at p<0.001; φ=0.55

To conclude, while *that*-clauses are compatible with a large variety of tenses and aspects, the other qualifying patterns are strongly restricted to stative verbs (especially *be*) that have the same temporal reference as the matrix predicate.

11.4.3.2 A mental-space explanation

That-clauses denote units of information that are rather independent of the matrix clause; therefore, "there are no restrictions on the type of subject, predicate or time reference that the proposition can contain" (Ransom 1986: 32). The FINITE OPINION Construction profiles a relationship between a SUBJECT and a whole proposition, the content of which is practically unconstrained by the semantics of the construction. The subordinate proposition includes a finite verb slot that can be filled by a whole range of stative and dynamic verbs that may express all kinds of tense/aspect-distinctions; the reference-time of the *that*-clause may, for example, be contemporaneous with, anterior to, or posterior to that of the matrix clause. In other words, the temporal and aspectual constitution of a *that*-clause is not restricted by the tense or aspect of the matrix verb.

The NP *to be* XP-string of the NON-FINITE OPINION Construction and the NP *as* V-ing XP-string of the *AS*-QUALIFYING Construction, on the other hand, are dependent on the matrix clause and its SUBJECT, a fact that also restricts the variability of tenses and aspects which can be expressed by them. Since these constructions profile a relation between a SUBJECT and a TOPIC, the TOPIC is not an independent part of the subordinate proposition, but is shared by the matrix clause and the non-finite subordinate clause (cf. Dik 1981: 28). As a consequence,

the two clauses are more strongly interconnected than the matrix clause and the *that*-clause of the FINITE OPINION Construction. The higher degree of interconnectedness of the two clauses also has an effect on the tense/aspect-distinctions that can be made in the subordinate non-finite clause. Compared to the formation of a *that*-clause, the formation of a non-finite qualifying sentence "weakens the integrity" of a subordinate proposition "by removing its subject, neutralizing tense distinctions and putting the remaining predication into an adjunct-like surface structure role" (Borkin 1984: 75). The fusion of the matrix and the subordinate clause in the verbless QUALIFYING Construction "further destroys the separate clause status" of the NP (*as*) XP-string (Borkin 1984: 75). There is no subordinate verb in the QUALIFYING Construction that could determine its own tense/aspect-value, so there is always a default stative 'be'-predication between the TOPIC and the XP. A non-finite clause is a more deranked clause type (Croft 2001: 354-7) than a subordinate *that*-clause, and a verbless NP (*as*) XP-string is more deranked than a non-finite clause because it only contains a non-verbal secondary predicate.

While finite verb forms in English have "absolute tense", i.e. can independently determine their tense/aspect values with respect to the speaker's point of reference, non-finite verb forms have "relative tense" (Comrie 1976: 2). The relative tense of a non-finite verb is determined by the meaning of the construction it is part of; May defines relative tense as "the relationship between the temporal incidence of a matrix verb and the temporal incidence of any complement which is predicated of that verb" (1987: 35). In English, there are essentially three kinds of relative tense available to non-finite verb forms. In a PERCEPTION Construction, the event denoted by the bare infinitive or the present participle takes place simultaneously with the act of perception expressed by the matrix verb (318a, b) (May 1987: 36; Duffley 1992: 29-30); seen alongside the bare infinitive, the present participle emphasises the unfolding of the perceived activity in time (Dixon 1995: 185).

(318) a. John saw Mary cross the street.
b. John saw Mary crossing the street.

In a "MODAL"-INFINITIVE Construction (Dixon 1991: 220), the main-clause SUBJECT wants, intends or expects the non-finite event to happen (cf. Duffley 1992: 19-20; May 1987: 34; Wierzbicka 1988: 35). As Duffley puts it, the infinitive evokes "a subsequent potentiality, i.e. an event whose actualization is futurized with respect to that of the main verb" (1992: 89). In other words, since "the expectation of the Subject is always prior to his certain knowledge of the acts or events" expressed in the non-finite clause, the relative tense of the non-finite verb is necessarily subsequent to the tense of the matrix verb in this construction (319).

(319) a. Mary wants John to come to her party.
b. Mary ordered John to come to her party.
c. I'd like you to leave now.

Like the NON-FINITE OPINION Construction, the PERCEPTION and MODAL-INFINITIVE Constructions do not denote the relationship between the SUBJECT and a state of affairs directly, but use a salient entity in the perceived or expected state of affairs — which I will also call TOPIC for convenience — as a metonymic reference point that mediates between the SUBJECT and the subordinate event (Langacker 1999: 348-9). In a PERCEPTION Construction, the main-clause SUBJECT perceives both an event and an entity participating in that event (cf. Bolkestein 1976: 287; Ureland 1973: 298-9). Since the SUBJECT's perception of the TOPIC is by necessity contemporaneous with the TOPIC's participation in the perceived event, the relative tense of the non-finite verb form in the PERCEPTION Construction is simultaneous with the temporal reference of the finite matrix verb. Similarly, there is also a relation between the SUBJECT and the TOPIC in the MODAL-INFINITIVE Construction: the SUBJECT does not only expect the event to happen as such, but also expects the TOPIC to be involved in this event (Dixon 1991: 226-7). In many cases, there is a control relationship between the SUBJECT and the TOPIC in the sense that the SUBJECT influences the TOPIC to take part in a future event; to put the matter another way, there is a relationship of inducive causation between the SUBJECT and the TOPIC (cf. 9.1) because the TOPIC functions as the addressee of the SUBJECT's command, request etc. and has, as a result, "an attitude of intention or volitionality toward the envisaged process" (Langacker 1999: 343).

The relative tense expressed by the non-finite verb in qualifying constructions is contemporaneous with the temporal reference of the main verb. Since qualifying constructions are stative, the subordinate clause does not denote a simultaneous event like the bare infinitive or present participle in the PERCEPTION Construction, but a state that holds of the TOPIC at the point of time that the SUBJECT has a belief about it. In other words, since the relationship between the SUBJECT and the TOPIC is stative, the judgement expressed by the non-finite predicate must be stative as well. As we have seen above, the non-finite verb forms in the NON-FINITE OPINION Construction and the *AS*-QUALIFYING Construction are strongly restricted to stative verbs with a characterising function. The verb *be* accounts for the lion's share of all instances, and other verbs as well as perfective, passive, and progressive verb forms must be interpretable as stative and characterising. Dynamic infinitives would clash aspectually with the stative SUBJECT-TOPIC relation because they could not be temporally anchored within the construction: **I consider John to come to the party*.

There is no evident reason for contending that some TOPICs in PERCEPTION, MODAL-INFINITIVE or NON-FINITE OPINION Constructions have a (metonymic) semantic relationship with the main clause, while others are denied such a relationship. The boundary between sentences in which NP_2 is semantically independent of the matrix verb (the classical Raising or ECM-cases) and sentences in which it has a semantic relationship with the matrix verb (the classical Equi or object-control cases) cannot be drawn in an unopportunistic fashion (Borkin 1984: 93-4; Langacker 1999: 322-3). It is more realistic to regard the semantic relationship between the SUBJECT and the TOPIC as forming a continuum (cf. Langacker 1991: 324; Mair 1993: 17-8), with the relation being quite direct and concrete in a speech-act configuration (*I order you to leave the room!*), less direct but still rather concrete in a perceptual relationship (*I saw him climbing the fence*), and more abstract and mental in volitional (*I want John to kiss me*) and qualifying sentences (*I believe John to be in love with me*). As Langacker notes, "full non-participation [of the TOPIC; H.S.] in the profiled relation [between SUBJECT and TOPIC; H.S.] represents the limiting case, the endpoint in a continuous spectrum of possibilities" (1999: 358). When no relationship between the SUBJECT and the TOPIC is implied, a *that*-clause is typically used, denoting a relation between the SUBJECT and the subsequent (320a) or simultaneous event (320b) or state (320c) as a whole (Dixon 1991: 218; Riddle 1975: 472-3). Borkin has shown that when a direct relationship between the SUBJECT and the TOPIC cannot be construed in a PERCEPTION Construction, a *that*-clause is obligatory (320d) (1973: 46-8).

(320) a. Mary wished that the war would end.
b. John saw that Mary was attacked by two young men.
c. John believed that Mary would visit him soon.
d. In the paper, we noticed that the store was closed/ ??the store to be closed.
(from Borkin 1973: 46)

Our discussion therefore tends to the conclusions that the relative tense of a non-finite verb form is determined by the meaning of the construction it is part of, and that, for qualifying sentences, the non-finite verb must be stative because the construction expresses a stative relationship between a SUBJECT and a TOPIC, with the non-finite clause providing a characterisation of the TOPIC that is based on the SUBJECT's personal view of it. The lower tense/aspect-potential of the NON-FINITE OPINION and QUALIFYING Constructions as compared to the FINITE OPINION Construction is thus quite in line with the expectations engendered by the different mental-space configurations established by these constructions.

11.4.4 Extraction of NP_2

11.4.4.1 The data

Mair has pointed out another difference between *that*-clauses and the NP inf XP-pattern: NP_2, i.e. the 'subject' of the non-finite variant, is frequently extracted from its clausal domain (1990: 191). My corpus data yield four syntactic environments that require the extraction of NP_2: relative clauses (321a), *what*-constructions (321b), *as*-constructions (321c), and direct/indirect questions (321d).

(321) a. Anselm overrode the objectors, told the monks of Bec to elect as abbot the man **whom** he believed **to be most fitted** (BNC CKR: 208).
b. It is reasonable for the Hong Kong government to do **what** it believes **to be in the best interests of the people of Hong Kong** (BNC CEM: 173).
c. If, **as** we believe **to be the case**, the unconscious activity of the mind consists in imposing forms upon content... (BNC CGY: 1174).
d. **What** does the right hon. Gentleman consider **to be the size of the fleet**? (BNC HHX: 15930).

I could not replicate the high proportion of extractions that Mair found in the corpus of the Survey of English Usage, where 40.5% out of 42 non-finite clauses occurred in relative-clause constructions alone (1993: 10). Table 25 displays my BNC results: in more than two-thirds of all instances, active sentences with *consider* and *believe* show no extraction of the non-finite 'subject'; relative constructions and *what*-constructions constitute the bulk of extraction cases, whereas *as*-constructions and questions are very rare.

Table 25: Extracted and non-extracted 'subjects' in the NP inf XP-pattern

	no extraction	**extraction in relative-clause constructions**	**extraction in *what*-constructions**	**extraction in *as*-constructions and questions**	***n***
NP inf XP (after *believe*)	207 **77.2%**	26 **9.7%**	34 **12.7%**	1 **0.4%**	268
NP inf XP (after *consider*)	224 **68.7%**	42 **12.9%**	58 **17.8%**	2 **0.6%**	326

FINITE OPINION clauses exhibit almost the same range of extraction environments as the NP inf XP-pattern[181]: the subject can be extracted in relative-clause constructions (322a) and *what*-constructions (322b); although I did not find an extraction example triggered by an *as*-construction or a question with finite *believe*, such patterns are clearly possible (322c, d).

[181] It is crucial that the complementiser *that* is not present, otherwise the sentence becomes ungrammatical: *He is the man **who** I believe* (****that***) ***is responsible** for all this*. I suspect that the obligatory absence of the complementiser is due to the fact that the matrix and the subordinate clause are more closely connected when an element is extracted from the subordinate domain, and that this interconnectedness is incompatible with an element that explicitly marks the boundary between the two clauses.

(322) a. And newspaper is a product **that** most people believe **is readily degradable** (BNC FTA: 220).
b. Hewlett-Packard Labs and AT&T Microelectronics have co-developed **what** they believe **is the first technology to transmit data at 100 Mbits/s** (BNC CSS: 416).
c. If that is the case that each of the political parties, **as** I assume **is the case** for er the Conservative party, I know it to be the case of the Labour party (BNC JSG: 265).
d. **What** do you believe **is the reason for this**?

However, extractions from finite clauses are considerably less frequent than from non-finite clauses; while roughly a third of all non-finite patterns has its 'subject' extracted, this is the case in just 4% of finite clauses (table 26).

Table 26: Extracted and non-extracted subjects in FINITE OPINION clauses[182]

	no extraction	**extraction in relative-clause constructions**	**extraction in *what*-constructions**	**extraction in *as*-constructions and questions**	***n***
finite clause (after *believe*)	1,261 **96.1%**	40 **3%**	11 **0.8%**	0 **0%**	1,312

Mair attributes the paucity of extractions from finite clauses to the fact that "the serial sequence of two finite verb phrases one of which is syntactically subordinated to the other ... is unusual and makes such structures difficult to process" (cf. *He is the man who I **believe is** responsible for all this*), and the higher extraction tendency of non-finite clauses to the fact that "the sequence of a finite verb and an infinitive ... is a good iconic representation of the hierarchical relationship obtaining between the two verb phrases" (cf. *He is the man who I **believe to be** responsible for all this*) (1990: 191). Although this assumption carries some weight, the conclusion Mair draws from it is vulnerable. Let me quote Mair at some length (note that he calls the NP inf XP-pattern a 'Raising'-structure):

> When in variation with finite complement clauses, *believe*-type raising constitutes the structurally, stylistically and semantically 'marked' option. A reversal of markedness occurs in syntactic environments requiring the extraction of subjects from embedded clauses, because such extraction tends to be ungrammatical or highly constrained in finite complement clauses. Raising is predicted to be more frequent or acceptable in those environments in which it serves as a convenient substitute for the finite complement clause, while the reverse distribution — raising being more frequent or acceptable in declarative clauses — is dysfunctional and therefore unlikely to be attested. (Mair 1993: 6)

If the NP inf XP-pattern were really functionally superior to finite clauses only in sentences with extraction, it is not clear why more than two thirds of all infinitival patterns after *con-*

[182] To make the numbers comparable with those of non-finite clauses, I used only those 1,312 finite clauses after *believe* (from the sample of 2,791) which contain a form of *be*. As the following examples show, extraction is not restricted to *that*-clauses with *be*, however:

a. The NUS has put forward counter proposals **which** it believes **meet the Government's central criteria of enhanced financial control of union activities** (BNC K5M: 8338).
b. What Pepper v Hart does is bring to an end an anomaly most lay people would not have **believed existed** (BNC CBT: 661).

sider, and more than three fourths of infinitival structures after *believe* occur in putatively 'dysfunctional' non-extracted environments (323).

(323) a. Thus the Catholic conservatives believe **the church to be a God-given institution** (BNC EF0: 275).
b. I had considered **my body to be lumpy, untidy, anomalous and entirely unsuited to the person within** (BNC CEE: 907).

Moreover, my informants did not rate extraction from finite clauses as marginal, but only as less formal. This assessment is also supported by a comparison of the proportions of extraction cases across various registers. While extraction is equally rare in all written domains, it is somewhat more frequent in the spoken subcorpus of the BNC (table 27).

Table 27: Ratio between extracted and non-extracted subjects in FINITE OPINION clauses across registers

text categories	extraction	no extraction	text categories	extraction	no extraction
natural and pure science (*n*=541)	17 **3.1%**	524 **96.9%**	**world affairs** (*n*=718)	23 **3.2%**	695 **96.8%**
applied science (*n*=754)	23 **3.1%**	731 **96.9%**	**arts** (*n*=603)	28 **4.6%**	575 **95.4%**
social science (*n*=717)	15 **2.1%**	702 **97.9%**	**leisure** (*n*=651)	22 **3.4%**	629 **96.6%**
belief and thought (*n*=472)	12 **2.5%**	460 **97.5%**	**imaginative** (*n*=386)	9 **2.3%**	377 **97.7%**
commerce and finance (*n*=728)	25 **3.4%**	703 **96.6%**	**spoken** (*n*=508)	32 **6.3%**	476 **93.7%**

χ^2=27.2; df=9; very significant at p<0.01; φ=0.1

Extraction is also quite frequent from the NP XP and NP *as* XP-patterns; the pertinent syntactic environments again include relative-clause constructions (324a, a'), *what*-constructions (324b, b'), *as*-constructions and questions (324c, c'). In addition, NP_2 is also sometimes extracted in topicalisation constructions (324d, d').

(324) a. Or that my mind, **which** I consider **intelligent and creative**, is occupied only with sex, violence and car engines? (BNC A8M: 72).
a'. Students should expect the Government to meet living costs, but not to cough up for the extra beer and nightclubbing **which** Richard regards **as an important part of student life** (BNC A8K: 485).
b. Then I am happy, in that I have attained what you would call success; and happy, in that I have attained **what** I consider **good** (BNC ASD: 2774).
b'. This perception leads Le Roy Ladurie to contrast the revolts of the fifteenth and sixteenth centuries with **what** he regards **as the national revolutionary movements of the Enlightenment** (BNC CMN: 1326).
c. In giving such consent, the committee may also impose such conditions **as** it considers **necessary or expedient** to ensure the adequacy of such arrangements (BNC A49: 460).
c'. **What** do you regard **as your particular strengths**? (BNC BNA: 1638).
d. **This** I still consider **the most brilliant course of lectures** I have ever heard anywhere (BNC H9X: 319).
d'. **His blackness** he now regards **as a personal stabilizer** rather than a means for rejecting society (BNC CL1: 1476).

The overall frequency of extraction differs between matrix verbs: while the relative number of extraction cases from the NP XP-pattern after *consider* is comparable to that from NP inf XP after *believe* or *consider*, it is much lower for NP XP after *find* and NP *as* XP after *regard* (table 28).

Table 28: Ratio between extracted and non-extracted 'subjects' in the NP XP and NP *as* XP-patterns

	no extraction	**extraction in relative constructions**	**extraction in *what*-constructions**	**extraction in *as*-constructions and questions**	**extraction in topicalisation constructions**	***n***
NP XP (after *consider*)	302 **66.5%**	98 **21.6%**	32 **7%**	17 **3.7%**	5 **1.1%**	454
NP XP (after *find*)	889 **88.9%**	83 **8.3%**	15 **1.5%**	0 **0%**	13 **1.3%**	1,000
NP *as* XP (after *regard*)	1,985 **82.7%**	231 **9.6%**	141 **5.9%**	5 **0.2%**	39 **1.6%**	2,401

To recapitulate: both the infinitival and the NP (*as*) XP-patterns show a considerable number of extraction cases (particularly in relative-clause and *what*-constructions), whereas extraction from *that*-clauses is uniformly low in all written registers.

11.4.4.2 A mental-space explanation

The TOPIC NP is extracted from the NON-FINITE OPINION and the QUALIFYING Constructions in a tenth to a third of all instances, particularly in relative-clause constructions and *what*-constructions, while it is rarely extracted from *that*-clauses (with the exception of spoken registers). The low frequency of extraction from finite clauses can be attributed to the fact that the FINITE OPINION Construction denotes a relation between a SUBJECT and an independent unit of information; since the TOPIC does not have any special status in the construction, it is highly unlikely to leave its clausal domain. The NON-FINITE OPINION and QUALIFYING Constructions, on the other hand, profile a relation between a SUBJECT and a TOPIC. The matrix and subordinate clauses are much more closely interconnected, and the TOPIC is therefore as much part of the higher than of the lower predication and can consequently more easily be 'moved' to a position in the matrix clause.

In a relative-clause construction, the TOPIC is independently introduced into a superordinate clause and is subsequently characterised by a qualifying pattern forming a relative clause; the qualifying pattern is put into the background relative to the superordinate proposition the TOPIC is part of (325a). In a *what*-construction, the TOPIC is directly introduced into the sentence by way of its characteristics: the variable *what* acts as a place-holder for the TOPIC, which is more closely specified by a qualifying construction. In some cases, the characterised variable is supplemented by a definitely referring NP that is provided in an informationally

salient position at the end of the sentence (325b); in most instances, however, the variable is only enriched by the characteristics provided by the qualifying predication and is not more closely specified by an additional NP (325c, c').

(325) a. Crawford played Kent, one of the boys who go on strike and threaten to burn down the gym when the headmaster decides to dismiss **the teacher**, who has fallen in love with his son — and **whom he believes to be his illegitimate daughter** (BNC HRF: 255).
b. Women are the historical 'have-nots' and as a consequence they take over **what they consider to be their only 'possession' — their children** (BNC EVS: 1829).
c. All first-class advocates concentrate on **what they consider to be their good points** (BNC FRA: 1090).
c'. All you have to do is put the qualities for the Man of the Nineties listed on the coupon in order of **what you consider to be important**, from one to six (BNC A7N: 1400).

11.4.5 Voice

11.4.5.1 The data

The active/passive ratio between sentences in the three non-finite and verbless qualifying patterns differs substantially.[183] Verbs followed by the NP inf XP-pattern show a strong tendency to occur in the passive voice: 80.3% of all infinitival sentences with *know*, 75.6% of all sentences with *assume* and 62.4% of all sentences with *believe*, for example, are found in the passive (326a). Verbs followed by the NP XP-pattern do not behave uniformly: while verbs of group II such as *consider* and *judge* show a balanced active/passive ratio (326b, b'), *find* occurs almost exclusively in the active voice (326c). Finally, most verbs followed by the NP *as* XP-pattern exhibit a slight tendency to occur in the active; this is the case with 64.6% of all instances with *regard* and 77.9% of all instances with *think of*, for example (326d).

(326) a. **Many new members of an audience have been known to object** to the applause greeting the last bow (BNC A12: 968).
b. She would go on the day **she judged best** (BNC A6N: 834).
b'. There is also concrete, steel tubing and glass to think about, **materials judged more suited** to framing the aspirations of modern man (BNC AB6: 191).
c. At first they irritate a bit but when you are used to them **you find them serviceable** (BNC A68: 1943).
d. **Gardeners occasionally regard shade as an evil** to be avoided at all costs (BNC A0G: 2678).

Table 29 demonstrates that the tendency for NP inf XP to be found after passive matrix verbs and for NP XP after *find* to occur after active matrix verbs is highly significant, while the slight tendency for NP *as* XP to be combined with active verbs does not indicate statistical significance.

[183] *That*-constructions can be disregarded here because they only allow an impersonal passive (*It is believed that* ...). We will turn to this variant in the following section.

Table 29: Active/passive ratio for the NP inf XP, NP XP and NP *as* XP-patterns

	Active	**Passive**	Σ (patterns)
NP inf XP (after *believe*)	268 (466) χ^2=**84.1**	444 (246) χ^2=**159.4**	712
NP XP (after *consider*)	468 (577.3) χ^2=**20.7**	414 (304.7) χ^2=**39.2**	882
NP XP (after *find*)	1,000 (660.4) χ^2=**174.6**	9 (348.6) χ^2=**330.8**	1,009
NP *as* XP (after *regard*)	2,572 (2,604.3) χ^2=**0.4**	1,407 (1,374.7) χ^2=**0.8**	3,979
Σ (voices)	4,308	2,274	6,582

χ^2=810; df=3; highly significant at p<0.001; φ=0.35

The high proportion of passive sentences with the NP inf XP-pattern has long attracted the interest of syntacticians. Mair gives an explanation for this phenomenon in terms of information structure, arguing that the passive version of the NP inf XP-pattern makes it possible to move NP_2 to the main-clause subject position, which typically codes contextually given information (Mair 1990: 181). This is reasonable enough, but does not furnish a complete answer. It is true that *that*-clauses after an active matrix verb frequently contain new information: "it makes sense that a proposition that is largely independent of previous given information should be put into maximal relief as a fully tensed, whole constituent clause" (Borkin 1984: 59). However, it has been observed that NP_2 is typically a contextually given element not only in passive, but also in active variants of the infinitival pattern (this is also true of the NP (*as*) XP-patterns):

> information structure-wise the opposition is not between *that*-clauses and infinitival complements with passive matrix verbs, but between *that*-clauses and infinitival complements full stop, irrespective of whether the matrix verb is passive or active, and ... the passive option is normally only taken to avoid mentioning the active subject because there is no need to mention it. (Noël 1997: 276; see also Borkin 1984: 59-61)

In a corpus-based study of 100 sentences with the NP inf XP-pattern, Noël has been able to show that NP_2 is most frequently a pronoun or noun phrase that "takes up a referent from a preceding clause in the same sentence or from a previous sentence" (1997: 277). While these observations yield another difference between *that*-clauses and the non-finite or verbless qualifying patterns (new vs. given TOPIC NP), they do not provide an answer to the question why the infinitival pattern occurs so frequently after passive verbs and the NP XP-pattern most

typically after active verbs, because both structures predominantly contain given TOPIC NPs. This question will be pursued in the following section.

11.4.5.2 A mental-space explanation

Verbs of group I occur in the passive version of the NON-FINITE OPINION Construction in more than two thirds of all instances. Given the fact that the passive is normally a marked structure and much rarer than the active (passives make up 2% of all finite verbs in conversation, 15% in journalistic texts and 25% in academic prose; see Biber *et al*. 1999: 476), it is a highly unusual finding that "the passive, and not the active, is the statistical norm" for this construction (Mair 1990: 176).

Even more remarkable is the fact that most of the constraints which govern the active NON-FINITE OPINION Construction do not apply in the passive variant (Mair 1990: 190; Wierzbicka 1988: 52). While the NP inf XP-string is typically short when following an active form of *believe* (8 words on average; cf. 11.4.2.1), it is considerably longer after passive *believe* (11 words on average). This length is very similar to that of finite *that*-clauses (12 words on average). As a consequence, long non-finite clauses are less unusual in the passive counterpart of the NON-FINITE OPINION Construction (cf. 327a with 34 words), as are non-finite cases containing another subordinate clause (327b).

(327) a. It is believed **to have been composed early in the second century, very likely by an individual who was indeed named Jude and who, together with his brother James, presided over the Nazarean party at the time** (BNC EDY: 1532).
b. This house and Palazzo Durini ... are believed to be the first two town houses to have been built in the city **after the population had been decimated by plague in 1630** (BNC ANB: 1243).

Moreover, most of the tense/aspect restrictions governing the active NON-FINITE OPINION Construction are absent from the passive variant. As can be seen from table 30, *to be* makes up a full 89.9% of all verbs in active versions of the NON-FINITE OPINION Construction, but accounts for a mere 37.4% of all verbs in the passive variant. Interestingly, this is very similar to the proportion of finite *be* in the FINITE OPINION Construction after *believe* (42.9%). On the other hand, perfective forms account for just 4.1% of all verbs in the active NON-FINITE OPINION Construction, but make up 23% of the verb forms in the passive variant. Again, this is comparable to the proportion of past and perfective verbs in the FINITE OPINION Construction (20.6%). Passive verb forms are also very rare in the non-finite pattern after active *believe* (3%), while they are more frequent after passive *believe* (12.7%); the proportion of passive verb forms in *that*-clauses after *believe* lies between these two values (7.3%). Similarly, progressive verbs, which are very rare in the active NON-FINITE OPINION Construction (0.7%), are more frequent in both the passive non-finite variant (8.1%) and the FINITE OPINION Con-

struction (6.4%). A further indication of the parallels holding between passive non-finite clauses and *that*-clauses lies in the frequency of other non-perfective, non-passive and non-progressive simple verbs: while their proportion is quite substantial in these two patterns (19.4% and 22.7%, respectively), it is very low (just 2.2%) in active non-finite sentences.

Table 30: Comparison of tense/aspect variation between the active and passive NON-FINITE OPINION Constructions and the FINITE OPINION Construction

	active NON-FINITE OPINION CONSTRUCTION	**passive NON-FINITE OPINION CONSTRUCTION**	**FINITE OPINION CONSTRUCTION**
be (same temporal reference as main verb)	241 **89.9%**	166 **37.4%**	1,198 **42.9%**
past/perfective verb (including *be*; only active)	11 **4.1%**	102 **23%**	575 **20.6%**
passive verb (same temporal reference as main verb and anterior to main verb)	8 **3%**	54 **12.7%**	204 **7.3%**
progressive verb (same temporal reference as main verb and anterior to main verb)	2 **0.7%**	36 **8.1%**	180 **6.4%**
other verbs than *be* (same temporal reference as main verb; only active)	6 **2.2%**	86 **19.4%**	634 **22.7%**
n	268	444	2,791

χ^2=248; df=8; highly significant at p<0.001; φ=0.3

The passive NON-FINITE OPINION Construction is thus as unrestricted with respect to tense/aspect distinctions as the FINITE OPINION Construction. Unlike in the active NON-FINITE OPINION Construction, the infinitive in the passive counterpart can refer to a dynamic event that precedes the temporal reference of the matrix verb (328a vs. a') and can also be realised as a non-characterising passive (328b vs. b'). Moreover, the passive construction occurs with non-characterising progressive verbs (328c vs. c'), and all kinds of non-characterising simple verb forms (328d vs. d'). In addition, the passive NON-FINITE OPINION Construction can even refer to future events, something that is strictly disallowed in the active variant (328e vs. e').

(328) a. Spiro is believed **to have driven off** in a four-wheel-drive vehicle (BNC K97: 624).
a'. ??I believe Spiro to have driven off in a four-wheel-drive vehicle.
b. The meeting, believed **to have been suggested by the Soviet Union**, is the first such encounter since 1971 (BNC A9N: 93).
b'. ??The meeting, which I believe to have been suggested by the Soviet Union, ...
c. Mr Shaw was believed **to have been waiting** to collect fishbait near the shores of Belfast ... when a car pulled alongside and a gunman opened fire (BNC K5M: 2151).
c'. ??The police believe Mr Shaw to have been waiting to collect fishbait ...
d. [H]e was generally believed **to carry** his wife around secretly on his travels in a box or coffin (BNC CFF: 199).
d'. ??I believe him to carry his wife around secretly in a box or coffin.

e. The campaign is believed to start next week. (ROS: 18)
e'. ??The public believes the campaign to start next week. (ROS: 64)

All this evidence is grist to the mill in establishing the passive NON-FINITE OPINION Construction as a functional counterpart to the active FINITE OPINION Construction rather than to the active NON-FINITE OPINION Construction. The following two characteristics also key in with our analysis: the TOPIC of the passive NON-FINITE OPINION Construction can more easily be realised by vaguely or indefinitely referring pronouns such as *there* or *the littlest thing* (329a, a') than the TOPIC in the active variant (cf. 11.3), and the string 'TOPIC-passive matrix verb' does not form an apparent constituent as does the string 'SUBJECT-active matrix verb-TOPIC' (329b vs. b') (Bolinger 1967a: 52; cf. footnote 170).

(329) a. The red stripe on the file was attached only if **there** was believed to be a risk of escape (BNC CJT: 476).
a'. **The littlest thing** is believed to be irritating to him.
b. **The man was believed** to be insane./ **John was believed** to be lying.
b'. ?**I believe the man** to be insane./ ?**I believe John** to be lying.
(from Bolinger 1967a: 52)

The syntactic differences between the active and passive versions of the NON-FINITE OPINION Construction have frequently been commented on, but they have not been convincingly explained so far. Functionally speaking, the passive construction distinguishes itself from its active counterpart by the relative prominence accorded to the SUBJECT and the TOPIC. As has been pointed out in the preceding section, the TOPIC NP is typically a textually 'given' element in both the active and the passive NON-FINITE OPINION Construction. Only the passive variant, however, foregrounds the TOPIC by putting it into the prominent initial slot of the construction. From a textual perspective, the passive construction is a "useful means of redistributing sentence information" (Mair 1990: 180) because the given TOPIC NP can be put into the clause-initial slot, which is the most appropriate position for purposes of textual coherence. The constructions extracting the TOPIC from the active NON-FINITE OPINION Construction (cf. 11.4.4.1) also help to promote this entity to the first constructional slot. In a relative-clause construction, for instance, the TOPIC is first introduced into the superordinate clause before it is qualified in the NON-FINITE OPINION Construction. Frequently, the relative-clause construction and the passive NON-FINITE OPINION Construction, which are functionally related means of foregrounding the TOPIC, occur in combination (330).

(330) a. **The rapist, believed to be aged 20 to 22 years**, was described as lean but muscular and about 5ft 8in tall (BNC A49: 568).
b. One of those was **Hafez Dalkammoni, believed to be the cell's leader**, who is now awaiting trial on arms offences (BNC AAL: 19).
c. Ghouls are more accurately **evil spirits, believed to haunt graveyards and similar places**, and to 'feed' on human remains (BNC B2G: 1408).

This brings us to another functional advantage of the passive version. Unlike its active counterpart, it allows the speaker or writer to present a judgement about the TOPIC in a more impersonal way: "The passive construction refers to other people's opinion, which the speaker wishes to disassociate himself from; the active construction, on the contrary, refers to the speaker's private thoughts" (Wierzbicka 1988: 49). The passive NON-FINITE OPINION Construction thus effects a figure/ground reversal that is typical of passive constructions in general: it allows the TOPIC to be foregrounded by being put into the first constructional slot and the SUBJECT to be backgrounded or even eliminated, thereby presenting the belief in a more general way and not from the point of view of an individual SUBJECT.

These functional characteristics of the NON-FINITE OPINION Construction do not, in themselves, explain why the constraints governing the active NON-FINITE OPINION Construction are absent from the passive counterpart — unless we go one step further. In functional terms, a sentence such as *John is believed to be a genius* may be interpreted not as the passive version of the sentence *I believe John to be a genius*, but as the passive of the FINITE OPINION sentence *I believe that John is a genius*, which does not put any restrictions on the complexity or tense/aspect potential of the subordinate clause either. A true personal passive of the finite construction, in which the TOPIC of the subordinate *that*-clause is fronted to the initial position of the matrix clause and the SUBJECT is eliminated from the construction, is not possible (**John is believed* (*that*) *is a genius*), but a sentence of the type *John is believed to be a genius* fills this structural gap. Looked at in this way, both the TOPIC and the judgement made on it have been promoted to matrix-clause status in the passive construction, while the original matrix clause is demoted to a less prominent position — the personal SUBJECT is not usually included in the construction at all, and the original matrix verb is relegated to a more adverbial-like function, modifying the original subordinate proposition. Bolinger has been the first scholar to hit upon this idea by explicitly likening the function of *is believed to* to adverbials such as *allegedly*, *supposedly*, *so they say* etc., and by comparing its form to auxiliaries such as *is able to*, *is bound to* etc. (1974: 79-80). In this view, a sentence such as *John is believed to be a genius* is an example of the process of clause-collapsing, which Croft describes in the following way: "a complex sentence structure with a main verb and a complement verb is being reanalyzed as a single clause with a tense, aspect, and/or mood indicating form (the former main verb) and a main verb (the former complement verb)" (2001: 218). When the subordinate clause has indeed become the main clause in the passive NON-FINITE OPINION Construction, with the former matrix verb having been demoted to an adverbial-like modifier restricting the validity of the new main clause, the lack of restrictions governing passive in-

finitival sentences can readily be accounted for.[184] Unlike the active NON-FINITE OPINION Construction, the passive variant does not profile a relationship between a SUBJECT and a TOPIC, but a whole proposition like a *that*-clause, with the difference that the TOPIC has been promoted to the clause-initial position. The SUBJECT holding the belief is, as a rule, not mentioned explicitly, but remains 'off-stage' and is construed generically. Not surprisingly, therefore, the passive construction is typical of academic texts that prefer the expression of impersonal stance to subjectively anchored opinions (cf. Biber *et al.* 1999: 980). The examples given in (331a, a') fall in neatly with our line of reasoning because they illustrate cases in which the non-finite clause, which has been promoted to main-clause status, is coordinated with a finite main clause; (331b) clearly shows the adverbial-like function of *is believed to*, which could easily be replaced by a modal verb (*The British Museum has, or may have, some* ...).

(331) a. Both were believed **to have originated** from the Soviet Union and **had been smuggled** through Czechoslovakia (BNC HLL: 2463).
a'. It is believed **to bestow** merit and prosperity and **acts** as a protective circle preventing harm (BNC CB9: 459).
b. The British Museum has (or **is believed to have**) some 5 or 6 million objects (BNC AC9: 1343).

Of course, there is also a passive variant of the FINITE OPINION Construction (332). From a functional perspective, this pattern comes off poorly in comparison with sentences such as *John is believed to be a genius* because it only allows the demoting of the SUBJECT, but not the fronting of the TOPIC. The clause-initial slot is occupied by extrapositive *it*, which is in construction with the extraposed *that*-clause. The functional motivation of the passive FINITE OPINION Construction is therefore much weaker than that of the passive NON-FINITE OPINION Construction. Of the 2,791 instances of the FINITE OPINION construction in my corpus sample, only 94 (3.4%) are in the passive. The passive NON-FINITE OPINION Construction therefore seems to come in handy as a more effective passive version of the FINITE OPINION Construction.

(332) a. It is believed that over six million men, women and children died in concentration camps under Nazi domination (BNC ALY: 942).
b. When ice melts it is believed that this structure is largely maintained but that the spaces become partly filled (BNC C9V: 713).

Far from being just a passive variant of the active NON-FINITE OPINION Construction, the passive non-finite clauses after *believe* constitute a construction in its own right; picking up a term coined by Wierzbicka (1988: 47), I will call it the PASSIVE-OF-OPINION Construction.

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[184] A further indication that this analysis is somewhere around the right track comes from a structure such as *John is said to be a genius*, which does not have a non-finite, but only a finite active counterpart (**They say John to be a genius*; *They say that John is a genius*).

There is one more functionally related construction that deserves mentioning in this context. The sentences provided in (333) illustrate what I will call the PARENTHETICAL OPINION Construction (cf. Dixon 1991: 209-15; Noonan 1985: 86; Schneider 1988b: 29-30). Like the ACTIVE FINITE OPINION CONSTRUCTION, this construction profiles a proposition and not a relation between a SUBJECT and a TOPIC; unlike the former construction, however, the believed proposition does not occupy a subordinate *that*-clause, but the main clause, and the SUBJECT plus the mental verb are provided in a parenthetical clause that can go in any of the major breakpoints of the matrix clause.[185] As a result, both the SUBJECT and the TOPIC are foregrounded because they occupy prominent positions in their respective clauses, and none is syntactically subordinated to the other.

(333) a. Her loyalty, **she believes**, is worth a great deal to Charles (BNC FB0: 189).
b. Vietnam's weakness was, **he believed**, endemic to the people and its society (BNC EFA: 60).

Table 31 illustrates where each of the constructions that profiles a whole proposition sits within the spectrum of functionally related opinion constructions. While the PARENTHETICAL OPINION Construction and the ACTIVE FINITE OPINION Construction foreground a personal SUBJECT, the person holding the belief remains implicit in the PASSIVE-OF-OPINION Construction and the PASSIVE FINITE OPINION Construction and is usually interpreted as 'people in general'. On the vertical dimension, the PARENTHETICAL OPINION Construction and the PASSIVE-OF-OPINION Construction put a premium on the TOPIC by putting it into the constructionally initial slot, whereas the other two constructions demote it to a position in the subordinate clause. None of these constructions is thought to be derived from another because, as we have seen, we would miss many differences if we derived the PASSIVE-OF-OPINION Construction, which profiles a believed proposition, from the ACTIVE NON-FINITE OPINION Construction, which profiles a relation between a SUBJECT and a TOPIC. I therefore fully agree with Bolinger's statement that "we come out with a better explanation if we appeal to the coexistence of constructions rather than to formal derivations" (1974: 84).

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[185] A corpus study conducted on the basis of 240 instances of the PARENTHETICAL OPINION CONSTRUCTION with *believe* has shown that the parenthetical clause occupies the position after the TOPIC (plus the main verb *be* in some examples) in 68% of all cases (cf. a, a') and the clause-final position in 25% of all cases (cf. b); in only 7% of all instances is it found in a different position in the sentence (cf. c).

a. But this**, I believe,** is a mistake (BNC EV4: 19).
a'. She was**, Betty believes,** genuinely shy and nervous (BNC GU9: 926).
b. PC-based X-solutions are more popular in business than X-terminals**, she believes**. (BNC CSX: 93).
c. Ardnave ... is the birthplace**, we believe,** at least the paternal residence, of Miss Campbell (BNC FTT: 222).

Table 31: Functional map of opinion constructions profiling a proposition

	TOPIC foregrounded	TOPIC backgrounded
SUBJECT foregrounded	PARENTHETICAL OPINION Construction ***He** is a genius, **I** believe*.	ACTIVE FINITE OPINION Construction ***I** believe that he is a genius.*
SUBJECT backgrounded (or eliminated)	PASSIVE-OF-OPINION Construction ***He** is believed to be a genius*.	PASSIVE FINITE OPINION Construction *It is believed that he is a genius.*

Let me pick up a few loose threads at the end of this section. Most verbs that are typically associated with the QUALIFYING and *AS*-QUALIFYING Constructions occur slightly more often in active than in passive sentences. The passive versions of these constructions constitute a reversal of the unmarked relationship between the SUBJECT and the TOPIC, with the latter occupying the more prominent clause-initial position and the former being demoted to a *by*-phrase or being only implicitly present in the passive sentence (334a, b).[186] Since verbs such as *consider*, *judge*, *deem* or *regard* are primarily used for rational, if subjective, judgements, sentences with an implicit SUBJECT convey the sense that the judgement expressed by the construction is shared by many people. The greater subjectivity and idiosyncrasy of the judgements provided by qualifying sentences with *find*, on the other hand, explain why this verb is practically restricted to active sentences. Since judgements introduced by *find* mostly express a SUBJECT's emotional or intellectual reaction to a TOPIC, these judgements require the explicit mentioning of a personal SUBJECT. Of the 1,009 qualifying sentences with *find*, only a fraction of 9 occur in the passive; interestingly, all of them include a *by*-agent (334c).

(334) a. Grant Metropolitan's Entrepreneur lease already provides for independent arbitration but **rents are still considered excessive by many tenant leaders** (BNC A14: 775).
b. The reply came from an under-secretary who said that **the present funding was considered adequate** (BNC A98: 80).
c. Two of the best-remembered things in it are Emma's adulterous drive in the curtained cab (**a passage found especially scandalous by right-thinkers**) ... (BNC G1A: 374).

11.4.6 Categorial realisation of XP

11.4.6.1 The data

The three non-finite or verbless qualifying patterns also differ in how the XP is typically realised categorically. PPs are the rarest option[187]: they are found in fewer than 10% of all in-

[186] There is an unusual English construction that also allows to reverse the figure/ground relation of the SUBJECT and the TOPIC, but requires the SUBJECT to be explicitly mentioned. While the sentence *I consider John a genius* foregrounds the SUBJECT and backgrounds the TOPIC, the structure *John strikes me as a genius* puts the TOPIC into the clause-initial position and the SUBJECT into a less prominent but obligatory constructional slot.
[187] Cases in which the XP is not realised as a PP, NP or AP are few and far between. In (a), it is realised as an adverb, and in (b) as a subordinate clause.

stances in the NP inf XP-pattern[188] (335a) (e.g. in 9.5% of all instances after *believe*, 9.4% after *reckon*; 8.5% after *assume* and 6.7% after *know*) and hardly occur in the NP XP-pattern (335b) (e.g. in 3.8% of all instances after *deem*, 2.7% after *consider*, 1% after *judge* and 1% after *find*) and the NP *as* XP-pattern[189] (335c) (e.g. in 1.9% of all instances after *regard*, 1.6% after *view*, 0.6% after *consider* and 0.5% after *count*). The NP inf XP-pattern does not show a clear tendency in favour of either NPs or APs: *believe* and *presume* exhibit a slight preference for NPs (335d), and *know* and *assume* for APs (335e), without these differences being in any way significant. The NP XP-pattern, on the other hand, clearly prefers APs (335f): they account for 62.1% of all instances after *consider*, 67.2% after *judge*, 77.5% after *deem* and a full 92.7% after *find*. The NP *as* XP-pattern is exactly the reverse of NP XP and exhibits a marked tendency for NPs, which occur in 70.4% of all instances after *regard*, 79.2% after *view*, 81.4% after *consider* and 87.1% after *count* (335g).

(335) a. Tam Dalyell believes drug substitution **to be against the national interest** (BNC B73: 2044).
b. [I]f this is not produced, he considers his responsibilities **at an end** and shuffles back into the hut where he lives rather snugly (BNC G3M: 372).
c. Many people regard themselves **as under the authority of the state** (BNC ANH: 1038).
d. These six poems are a brief moment of religious experience in an age that believes religion **to be a kind of defeatism** (BNC A1B: 1515).
e. Because Mrs like erm sort of assumes herself **to be really fashionable** by the things that like up with the fashions or anything (BNC JSV: 121).
f. I find it **galling** that they seem to keep looking for jam today (BNC A6L: 1458).
g. Record companies consider this support quite economic because they view a band's tours **as a good way of promoting records** (BNC A6A: 2145).

Table 32 compares the categorial realisations of XP for six selected verbs. When we disregard PPs, we see that the relationship between NPs and APs is as expected for the NP inf XP-pattern; the observed frequencies for NPs in the NP XP-pattern are significantly lower than the expected frequencies, whereas there are significantly more APs than expected; in the NP *as* XP-pattern, on the other hand, the observed frequencies are significantly higher than the expected frequencies for NPs, but significantly lower for APs.

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a. Montgomery clearly regarded the conversation as **over** (BNC CKC: 2983).
b. [A]nd the daughter, if she felt like coming home, preferred to regard home as **where her mother was** (BNC H8Y: 1247).

[188] Not counted were those infinitival sentences in which the infinitive is realised by another verb than *to be* because otherwise the NP inf XP-pattern could not be compared to NP XP; moreover, only active sentences were considered because the passive NP inf XP-pattern constitutes a construction of its own, the PASSIVE-OF-OPINION Construction (cf. 11.4.5.2).

[189] Only those NP *as* XP-patterns that do not include another verb were counted here (cf. preceding footnote).

Table 32: Categorial realisation of XP for the NP inf XP, NP XP and NP *as* XP-patterns

	NP	**AP**	**PP**	∑ (patterns)
NP inf XP (after *assume*; active voice)	32 (47) χ^2=**4.8**	43 (33.3) χ^2=**2.8**	7 (1.8)[190] χ^2=**15**	82
NP inf XP (after *believe*; active voice)	125 (138) χ^2=**1.2**	93 (97.8) χ^2=**0.2**	23 (5.2) χ^2=**60.9**	241
NP XP (after *consider*)	310 (505) χ^2=**75.3**	548 (357.8) χ^2=**101.1**	24 (19.2) χ^2=**1.2**	882
NP XP (after *find*)	64 (577.7) χ^2=**456.8**	935 (409.3) χ^2=**675.2**	10 (22) χ^2=**6.5**	1,009
NP *as* XP (after *regard*)	2,579 (2,096.2) χ^2=**111.2**	1,011 (1,485.1) χ^2=**151.4**	71 (79.6) χ^2=**0.9**	3,661
NP *as* XP (after *view*)	917 (663.1) χ^2=**92.2**	223 (469.8) χ^2=**129.7**	18 (25.2) χ^2=**2.1**	1,158
∑ (categories)	4,027	2,853	153	7,033

χ^2=1,888.5; df=10; highly significant at p<0.001; φ=0.52

11.4.6.2 A mental-space explanation

Before we can attempt to account for the differences in the categorial realisation of XP between the NON-FINITE OPINION, the bare QUALIFYING and the *AS*-QUALIFYING Constructions, it will be expedient to sketch the outlines of a functional theory of syntactic categories. While formal grammarians usually distinguish syntactic categories on the basis of grammatical criteria such as distribution and inflection (Jackendoff 2002: 124-5; Schachter 1985: 3), functionalists posit that categories "have a cross-linguistically valid external basis" because they "are founded on basic principles of a commonsense ontological classification of the world and of presumably very deep principles of organizing information" (Croft 1991: 147; see also Dixon 1995: 175-6; Lyons 1966: 209-11).

[190] Although expected frequencies that are smaller than 5 can sometimes pose a problem, this is not the case here:

> We can go ahead and carry out the chi-squared test *even if some expected frequencies are rather too small* … If *all* the cells with small expected values have an observed frequency *very* similar to the expected and thus contribute relatively little to the value of the total deviance, it is unlikely that the value of the deviance has been seriously distorted, and the result can be accepted. (Woods, Fletcher and Hughes 1986: 145)

Croft discriminates between the central syntactic categories noun, verb and adjective on the basis of three semantic classes and three pragmatic functions. The semantic classes 'object', 'event' and 'property' can be described as bundles of the semantic characteristics 'valency', 'stativity', 'persistence', and 'gradability' (Croft 1991: 132). A concept has valency or inherent relationality "if its existence or presence requires the existence or presence of another entity" (Croft 1991: 62-3). Both events and properties are inherently relational: an event presupposes the existence of at least one participant that takes part in the event, and a property requires an entity it holds true of. An object, on the other hand, is not a relational semantic concept because it is perfectly possible to conceptualise an entity autonomously, i.e. without setting it in relation to another entity (Croft 1991: 63). Stativity represents "the presence of [sic!] absence of change over time in the state of affairs described by the concept" (Croft 1991: 63). Events, in the widest sense of the word, can be processual or stative; both objects and properties, on the other hand, are usually stative (Croft 1991: 63). Persistence refers to the distinction between individual-level and stage-level concepts. Processual events are transitory or stage-level because they do not last over time, while states are persistent or individual-level. Similarly, objects and properties typically denote persistent concepts (Croft 1991: 64). Finally, gradability pertains to the fact that "the entity denoted by the concept can be manifested in degrees"; only properties are gradable, whereas both objects and stative/processual events are non-gradable (Croft 1991: 65).

The pragmatic functions or "propositional acts" Croft identifies are 'reference', 'predication' and 'modification' (1991: 51-2). The act of reference identifies an entity by opening what Croft calls "a cognitive file" for that entity (1991: 118). The act of predication describes the role of an entity in a permanent or transitory state of affairs (Croft 1991: 52). Lastly, the act of modification enriches the cognitive file of an entity by specifying an additional feature of it (Croft 1991: 52).

Each semantic class is prototypically associated with a specific pragmatic function; the three syntactic categories 'noun', 'verb' and 'adjective' can be regarded as linguistic correlates of these unmarked pairings of semantic class and pragmatic function: "The relation between semantic class and pragmatic function is part of the (possibly innate) cognitive structure of every individual human language speaker" (Croft 1991: 95). The basic distinction in grammatical categories is between nouns and verbs because, as Sapir already noted, "there must be something to talk about and something must be said about this subject of discourse once it is selected" (1921: 119). The act of reference is typically used with respect to objects, because objects denote autonomous entities that are stable through time: "Lexical semantic categoriza-

tions based on unchanging and permanent features of the entity are more likely to be used for reference because a cognitive file must be opened and its identity maintained over time" (Croft 1991: 118). The syntactic category that is prototypically associated with objects that can be referred to is that of nouns. While pronouns (and proper names) only refer to an individual, most nouns typically evoke an entity as a representative of the kind it belongs to: "Pure referring is the main function of a pronoun; nouns refer and categorize at the same time" (Wierzbicka 1986: 365; see also Parsons 1990: 4). The act of predication is normally combined with events, which denote stative or processual relations between entities (Croft 1991: 55). Verbs can be identified as the syntactic category which normally denotes events that can be used to predicate of other entities. The act of modification is usually linked to properties, and the syntactic category that typically codes properties that modify an entity is adjective. As compared to nouns and verbs, adjectives are a less central syntactic category. There are quite a number of languages that only have a very small, closed class of adjectives, and adjectives also occupy a position intermediate between nouns and verbs in functional terms (Croft 1991: 130). Modification can be a subsidiary function to reference when an adjective is used to enrich the cognitive file of the referent evoked by a noun (Croft 1991: 52); in this use, an adjective derives its gender, number and case features from the noun. Modification can also be an ancillary function to predication when an adjective is employed to make a secondary comment on a participant in an event (Croft 1991: 52); in this use, an adjective is dependent on a verb effecting a primary predication.

The following table illustrates the position that the syntactic categories noun, verb and adjective occupy in the functional space mapped out by the semantic classes object, property and event, and the pragmatic functions reference, modification and predication. Each of the combinations is illustrated by an example; the prototypical associations are underlined. While prototypical nouns and verbs are characterised by only one combination of semantic class and pragmatic function, the category 'adjective' is a linguistic correlate of two typical combinations: property and modification for attributive adjectives, and property and predication for predicative adjectives.

Table 33: Functional space of syntactic categories

	Reference	**Modification**	**Predication**
Object	object reference NOUN (*the* ***cat***)	object modifier (***John's*** *cake*; *a cake* ***for John***)	object predication (*John is* ***a fool***)
Property	property reference (***beauty***; *a* ***beautiful*** *one*)	property modifier ATTRIBUTIVE ADJECTIVE (*the* ***pretty*** *cat*)	property predication PREDICATIVE ADJECTIVE (*the cat is* ***pretty***)
Event	event reference (*the* ***killing*** *of the president*; *a* ***killer***)	event modifier (*a* ***running*** *cat*; *the cat* ***which ran to the door***)	event predication VERB (*The cat* ***scratched*** *the dog*)

(adapted from Croft 1991: 67 and 2001: 92)

A prototypical noun referring to an entity opens a cognitive file for that entity by evoking the class the entity belongs to, along with all the properties which are typically associated with that class. A prototypical adjective that is used to modify a noun (attributive adjective) or to make a secondary comment on it (predicative adjective) enriches the cognitive file opened by that noun by ascribing an additional feature/property to it. While typical adjectives thus name a single feature, "nouns embody concepts which cannot be reduced to any combination of features. They stand for categories which can be identified by means of a certain positive image, or a certain positive stereotype, but an image which transcends all enumerable features" (Wierzbicka 1986: 361). In other words, "nouns tend to designate 'kinds of things' endowed with certain properties; whereas adjectives designate properties as such" (Wierzbicka 1986: 362). The pragmatic differences between typical nouns and adjectives are also mirrored in their inflectional behaviour: adjectives are gradable because they denote properties that can hold of a referent to varying degrees. Nouns are countable because "[a] noun can place the intended referent within a certain imaginable kind ..., and so it can make delimitation, identification and counting possible" (Wierzbicka 1986: 366).

In a qualifying pattern, the TOPIC is realised by an NP used for object reference, which opens a cognitive file for that NP. When the XP is realised by a predicative adjective, this adjective makes a secondary comment on the TOPIC NP by adding an additional property to it. The proportion of APs is particularly high for the NP XP-pattern, while it is balanced vis-à-vis NPs for the NP inf XP-structure, and comparatively low for NP *as* XP. In order to understand why adjectives are so central to the bare QUALIFYING Construction, it is necessary to take a closer look at the semantic groups of adjectives used in qualifying patterns. For heuristic reasons, I put the adjectives into three broad classes: adjectives such as *intelligent*, *small* or *modest* are categorised as 'characterising' because they enrich the cognitive file opened by the TOPIC NP with another characteristic; adjectives such as *important*, *appropriate* or *necessary*

do not denote a characteristic inherent in an entity, but evaluate the TOPIC against some external scale of importance, appropriateness, necessity etc.; I will call these adjectives 'evaluative'. Adjectives such as *stimulating*, *disgusting* or *incomprehensible* also evaluate the TOPIC, but in contrast to evaluative adjectives such as *important*, this is done on the basis of an emotional or intellectual reaction the TOPIC triggers in the SUBJECT; these adjectives will therefore be termed 'subjective-response'. These provisional semantic classes overlap in many respects, and some of my classifications are certainly arbitrary; nevertheless, the heuristic value of this classification is quite substantial, as the following table shows.

Table 34: Semantic classes of predicative adjectives in qualifying patterns

	characterising	**evaluative**	**subjective response**
believe NP inf AP (active) *n*=93	53 **57%**	37 **39.8%**	3 **3.2%**
consider NP AP *n*=548	247 **45.1%**	285 **52%**	16 **2.9%**
find NP AP *n*=935	143 **15.3%**	91 **9.7%**	701 **75%**
regard NP *as* AP *n*=330	223 **67.6%**	98 **29.7%**	9 **2.7%**

The proportion of characterising adjectives is slightly higher than that of evaluative adjectives in the NON-FINITE OPINION Construction, while subjective-response adjectives are hardly found in it. Since, as we will shortly see, characterisations can also be made by predicative NPs, this construction shows a balanced ratio of APs and NPs in the XP-slot. The following box illustrates some of the adjectives used with *believe* NP inf AP in the three semantic classes.[191]

***believe* NP inf AP**

characterising: *British*; *childish*; *clever*; *dangerous*; *dishonest*; *famous*; *fat*; *inspired*; *precious*; *superior*; *unorthodox*.
evaluative: *true* (12); *wrong* (4); *right* (2); *inefficient* (2); *desirable*; *essential*; *important*; *necessary*; *viable*; *worthwhile*.
subjective-response: *interesting*, *irresistible*; *offensive*.

While there are all kinds of adjectives in the characterising class (336a), the evaluative category is dominated by adjectives that evaluate the TOPIC as true or false (336b). These are evaluations that can float back to the Base Space because they could theoretically be checked by other persons; evaluations such as *important* or *necessary*, and particularly subjective responses such as *irresistible* (336c) are more idiosyncratic and consequently rare in the NON-FINITE OPINION Construction.

[191] This and the following boxes give ten examples for adjectives in each of the three semantic classes; in addition, all adjectives that occur three times or more are provided.

(336) a. Are we to conclude, therefore, that the Anglican Church's neglect of purification ritual for women is not because it believes women to be '**clean**', but because it would rather such matters weren't mentioned at all? (BNC ACL: 28).
b. But I believe it to be **true** that in many corners of Christendom spiritual warfare is no longer a central concern (BNC CCE: 18).
c. [A]geing and unmarried though he was, he believed himself to be **irresistible** (BNC G06: 824).

The QUALIFYING Construction with *consider* exhibits quite a large number of adjectives that are typically associated with it, especially in the evaluative class:

***consider* NP AP**	
characterising:	(*un*)*safe* (8); *lucky* (5); (*in*)*capable* (4); *dangerous* (4); *excessive* (4); (*un*)*natural* (4); *small* (4); (*un*)*able* (3); (*un*)*fortunate* (3); *inferior* (3); *intelligent* (3); *old* (3); *positive* (3); *responsible* (3); *superior* (3); *unethical* (3).
evaluative:	(*un*)*necessary* (39); (*in*)*appropriate* (36); *important* (20); (*un*)*desirable* (12); *essential* (11); (*un*)*likely* (10); *significant* (10); (*un*)*suitable* (8); *acceptable* (7); *good* (7); *relevant* (7); (*un*)*just* (5); (*un*)*fit* (4); (*in*)*adequate* (4); *prudent* (4); *sufficient* (4); (*un*)*wise* (4); (*un*)*worthy* (4); *impracticable* (3); *possible* (3); *satisfactory* (3); *useful* (3); *vital* (3).
subjective-response:	*strange* (2); *attractive*; *boring*; *helpful*; *impressive*; *odd*; *reassuring*; *revolting*; *surprising*; *vexing*.

The characterisations (337a) and evaluations (337b, b') given in qualifying sentences with *consider* are not supposed to float back to the Base Space; as a consequence, evaluative adjectives such as *necessary*, *appropriate*, *important* or *desirable*, which measure the TOPIC against a subjective scale provided by the SUBJECT, predominate this pattern. Since evaluations are typically expressed by adjectives and not by nouns, the NP XP-pattern after *consider* significantly prefers APs to NPs. The qualifications in sentences with *consider* are typically made on a rational basis; subjective-response adjectives (337c) are therefore quite rare in this pattern.

(337) a. The nicest thing is that you consider me **intelligent** (BNC AN7: 3594).
b. We consider it **necessary** to proceed to the resolution of the nationality question (BNC ANT: 1247).
b'. The Magistrates Association's immediate response was that its members already had this information and would continue to pass the sentence they considered **appropriate** to the offence (BNC G1J: 1087).
c. There were some notable gaps in care but on the whole the research can be considered reasonably **reassuring** (BNC CS7: 850).

The situation is different with qualifying sentences introduced by *find*. While some evaluative adjectives are also quite frequent, the pattern is strongly predominated by subjective-response adjectives:

***find* NP AP**	
characterising:	*funny* (8); (*un*)*able* (5); *wanting* (4); *cheap* (3); *beautiful* (2); *complex* (2); *loveable* (2); *expensive*; *modest*; *primitive*.
evaluative:	(*un*)*necessary* (19); (*un*)*acceptable* (10); *good* (7); (*un*)*convincing* (5); (*in*)*adequate* (3); (*un*)*satisfactory* (3); (*in*)*efficient* (2); (*un*)*favourable* (2); *ideal* (2); *important* (2).
subjective-response:	*difficult* (148); *hard* (106); *easy* (48); (*im*)*possible* (26); *useful* (22); *interesting* (21); *helpful* (17); (*un*)*attractive* (10); *intolerable* (7); *boring* (6); *embarrassing* (6); *frustrating* (6); *tough* (6); (*in*)*convenient* (5); *distasteful* (5); *stimulating* (5); *strange* (5); *amusing* (4); *appealing* (4); *disturbing* (4); *exciting* (4); *fascinating* (4); *incomprehensible* (4); *irritating* (4); *painful* (4); (*un*) *pleasant* (4); *rewarding* (4); (*un*)*surprising* (4); (*dis*)*agreeable* (3); (*un*)*comfortable* (3); *confusing* (3); *diverting* (3); *enjoyable* (3); *pleasing* (3); *valuable* (3).

Qualifying sentences with *find* are used for idiosyncratic, not very rational and often merely temporary qualifications. In contrast to the pattern with *consider*, both the characterisations (338a) and the evaluations (338b, b') imply a less rational perspective.

(338) a. She was one of the few people in the world who genuinely found Henry **funny** (BNC ASS: 2035).
b. I'm afraid you'll find it **necessary** to entertain yourself (BNC HHB: 2467).
b'. Another disciple of Nostradamus, S. O. Letterman, has been throwing the pebbles in LA and finds the omens **good** (BNC FAJ: 1328).

The subjective-response adjectives used with *find* fall in a number of semantic subclasses. Most adjectives denote qualifications of a TOPIC as easy or difficult for the SUBJECT to handle (339a, a'); other adjectives denote negative or positive emotional reactions of the SUBJECT towards the TOPIC (339b, b'), or negative or positive intellectual reactions to it (339c, c'). Still other adjectives represent more physical responses towards the TOPIC (339d, d'). Subjective-response meanings can hardly be expressed by NPs, which seems to be the reason why the NP XP-pattern after *find* strongly prefers predicative adjectives to predicative nouns.

(339) a. I find it **difficult** to persuade my family to eat healthily (BNC G2V: 2495).
a'. Certain children find it **easier** to resist temptation than others (BNC B10: 130).
b. Jack shook his head, evidently finding such cynicism **distasteful** (BNC GVP: 1702).
b'. He finds Miriam **appealing** and she holds for him the added attraction of being married (BNC BLW: 2162).
c. [E]ven if you find taxonomy **boring** you may find this helpful in understanding the names currently applied to these fish (BNC C97: 584).
c'. "Did you find the story **interesting**?" asked Dr Mortimer (BNC H7V: 123).
d. There was no bed and we did it on the floor, which I found excruciatingly **uncomfortable** (BNC FBM: 4392).
d'. Helen found the aromatherapy massage very **relaxing** (BNC G2F: 1499).

The *AS*-QUALIFYING Construction is not typically used with adjectives. The semantic types of adjectives that are found in this pattern are very similar to those that occur in the bare QUALIFYING Construction after *consider*:

***regard* NP *as* AP**	
characterising:	*suspect* (3); *ambitious* (2); *authentic* (2); *complex* (2); *hazardous* (2); *inferior* (2); *neutral* (2); *primitive* (2); *sacrosanct* (2); *stubborn* (2).
evaluative:	(*un*)*important* (13); (*un*)*necessary* (6); *essential* (5); *inevitable* (4); *normal* (4); *desirable* (3); (*un*)*fair* (3); *relevant* (3); *significant* (3); *adequate* (2); *appropriate* (2); *vital* (2).
subjective response:	*agreeable*; *boring*; *disturbing*; *encouraging*; *impressive*; *intrusive*; *oppressive*; *outrageous*; *relaxing*.

Since this pattern is used for subjective but rational judgements, characterising (340a) and evaluative adjectives (340b) prevail, while subjective-response adjectives are not very common (340c).

(340) a. The other member states regard Germany as quite **isolated** (BNC AAA: 228).
b. Thus, the professions might continue to regard limiting 'forms of organisation among their members as **necessary**' (BNC A4K: 485).
c. Many English fans even regard West Indian cricket as **boring** (BNC ABR: 1363).

The semantic kinds of adjectives that are typically associated with NP inf AP after *believe*, NP AP after *consider*, NP *as* AP after *regard* and NP AP after *find* can also be brought out in evaluation tests. The following groups of sentences were submitted to 62 native speakers of English, who had to decide on the construction that sounded most natural to them (the number and percentage of informants who chose a particular sentence is given in parantheses). Evaluations as true or false strongly favour *believe* and the NON-FINITE OPINION Construction (341):

(341) a. The scientist **believes** this theory **to be true** (35/ **56.5%**).
b. The scientist **considers** this theory **true** (6/ 9.7%).
c. The scientist **finds** this theory **true** (15/ 24.2%).
d. The scientist **regards** this theory **as true** (6/ 9.7%).

Evaluative adjectives such as *important* or *likely* are most typically associated with *consider* and the bare QUALIFYING Construction (342 and 343). They are also rather common in the NON-FINITE OPINION Construction, which, however, conveys the meaning that the evaluation could be intersubjectively validated.

(342) a. The president **believes** this measure **to be important** (17/ 27.4%).
b. The president **considers** this measure **important** (23/ **37.1%**).
c. The president **finds** this measure **important** (7/ 11.3%).
d. The president **regards** this measure **as important** (15/ 24.2%).

(343) a. He **believes** it **to be likely** that the mayor will win the upcoming election (16/ 25.8%).
b. He **considers** it **likely** that the mayor will win the upcoming election (35/ **56.5%**).
c. He **finds** it **likely** that the mayor will win the upcoming election (8/ 12.9%).
d. He **regards** it **as likely** that the mayor will win the upcoming election (3/ 4.8%).

Characterising adjectives such as *intelligent* are equally found both in the bare and *AS*-QUALIFYING Constructions and the NON-FINITE OPINION Construction in the corpus (cf. table 34), and the evaluation test does not show any clear tendencies either (344). While (344a) conveys the sense that the teacher's characterisation is supposed to float back to the Base Space, this is not implied in (344b) and (344d). What is surprising is that quite a number of informants chose (344c) with *find*, although this verb is not typically used for rational characterisations in the corpus.

(344) a. The teacher **believes** Mary **to be intelligent** (17/ 27.4%).
b. The teacher **considers** Mary **intelligent** (16/ 25.8%).
c. The teacher **finds** Mary **intelligent** (15/ 24.2%).
d. The teacher **regards** Mary **as intelligent** (14/ 22.6%).

Subjective-response adjectives are strongly associated with *find*, and are rare in other constructions or after other matrix verbs.

(345) a. I **believe** this movie **to be repulsive** (1/ 1.6%).
b. I **consider** this movie **repulsive** (9/ 14.5%).
c. I **find** this movie **repulsive** (48/ **77.4%**).
d. I **regard** this movie **as repulsive** (4/ 6.5%).

Predicative adjectives, i.e. the linguistic correlates of the combination of the semantic class 'property' and the pragmatic function 'predication', are the typical realisation of secondary predicates. Since syntactic categories are "radial categories" (Lakoff 1987: 291), they are also characterised by various extensions from the unmarked prototype. In our context, we are mainly interested in one marked correlation between semantic class and pragmatic function, namely nouns that are used for object predication. When a syntactic category is employed for a marked pairing of semantic class and pragmatic function, it usually displays only a defective set of inflections (Croft 1991: 79). While nouns denoting objects for purposes of reference normally exhibit nominal inflections such as number, nouns used for predication do not normally set their number parameter independently of the NP that they are predicated of (**I consider John fools*; cf. 4.1.2). The main reason for this defective inflectional behaviour is that when a syntactic category is used for an untypical pragmatic function, it shifts semantically towards the category prototypically associated with this pragmatic function (Croft 2001: 73). Since the function of making a secondary comment on another entity in the event is typically fulfilled by predicative adjectives, nouns coerced into this function become semantically more adjective-like as well.

While objects and properties share the qualities of stativity and persistence, they differ with respect to gradability and valency. Objects used for secondary predication not only lose some of their typical nominal inflections such as independent number and case, but also take on the typical adjectival characteristic of gradation (*I consider John very much an expert/more an expert than a liar*; cf. 4.1.3). Moreover, while nouns used for object reference denote autonomous concepts that do not relate to any other entity, a relation to another entity must be coerced on predicative nouns (Croft 1991: 69). In the case of object predication, there is a continuum of relations that a predicative noun can have towards the NP it is predicated of (cf. 4.1.1): on one end of the scale, the predicative noun retains its referring qualities and denotes another entity that the NP is equated with (equative relation: *John is my English teacher*); in the middle of the continuum, the predicative noun evokes a class that the NP belongs to (classifying relation: *John is a teacher*); at the other end of the continuum, the noun is used completely predicatively and denotes a property like an adjective (characterising relation: *John is a genius*).

While the relation between the SUBJECT NP and the predicative noun can be equative, classifying or characterising in copula sentences, most qualifying patterns require a characterising relation; in other words, a predicative noun in a qualifying pattern is much more adjective-like than a predicative noun in a copula sentence. Equative predications, in which the XP is realised by an NP that serves as a label (value) that identifies the TOPIC (variable), are not possible in the bare and *As*-QUALIFYING Constructions (346a, a'), but sometimes occur in the NON-FINITE OPINION Construction (346b). As is typical of equative predications, in which both NPs are referring (but see footnote 23), the unmarked order of 'TOPIC (variable) before identifying label (value)' can also be reversed (cf. 4.1.1). An indication that we are dealing with a marked order is intonation: the identifying label, which sets the value of the TOPIC-variable, is the information focus and therefore typically stressed. While it is placed at the end of the sentence in the canonical alignment (346c), it is followed by the unstressed TOPIC in the marked alignment (346c') (for in-depth characterisations of equative predications and the difference between canonical and marked order, see Halliday 1994: 122-9 and Huddleston and Pullum 2002: 268-9).

(346) a. *I consider/find the murderer John.
a'. *I regard the murderer as John.
b. I believe the murderer to be John.
c. I believe the murderer to be **Jó**hn.
c'. I believe **Jó**hn to be the murderer.

The following two sentences (347) illustrate equative predications in the NON-FINITE OPINION Construction (both with the unmarked order of the TOPIC-variable preceding the identifying value). Such equative predications are not particularly frequent in this construction; of 125 NPs used as secondary predicates with the matrix verb *believe*, only 20 (16%) can be specified as equative.

(347) a. Supervising the diggers was a large man he recognised as the Irish-Scandinavian bishop from Saxony **whose name** he believed to be **Hrolf** (BNC HRC: 2183).
b. Believing **his benefactor** to be **Miss Havisham**, he nourishes a fantasy that she intends him to marry Estella (BNC B0Y: 1126).

Not only equative predications, but also classifying predications are not usually felicitous in qualifying constructions (348a, a') because a pure classification cannot normally express a judgement based on personal experience (cf. 11.2). A combination of classification and characterisation is therefore called for (348b, b'). A classifying NP opens a multidimensional cognitive file like NPs used for object reference; combined with a premodifying adjective, however, one of the features typically associated with the class is highlighted and ascribed to the TOPIC NP.

(348) a. ?I believe John to be **a teacher**. (ROS: 41)
a'. ?I consider John **a teacher**. (ROS: 45)
b. I believe John to be **a competent teacher**.
b'. I consider John **a competent teacher**.

The premodified NP is usually indefinite (349a), but can sometimes also be definite or possessive (349b, c). In quite a number of cases, the adjective is in the superlative degree (349d).

(349) a. Reso's widow Patricia, who went to the court, said of Seale: "I believe him to be **an evil person, a sick person**" (BNC CBE: 167).
b. I found the ankle cuff **the right height** and shape to provide support without restricting my movement (BNC A65: 1837).
c. McDiarmid considers Volpone '**our great classical comedy**' (BNC G2E: 397).
d. Within such an approach, objects may not be reducible to the workings of a central hierarchical principle, or be directly related to what are otherwise considered **the most important social divisions** (BNC FAK: 1194).

There is a limited number of NPs that express quality concepts like adjectives and that can therefore be used as characterising predicative nouns without an adjectival premodifier. 'Quality nouns' such as *alcoholic*, *cripple*, *fool* or *genius* do not open multidimensional cognitive files, but denote single properties like adjectives. In contrast to semantically related adjectives such as *intelligent* or *stupid*, however, the quality nouns *genius* and *fool* do not just ascribe a property to a person, but put the person into a category that is solely defined by a characteristic property. When an entity is categorised on the basis of a single, noticeable property, this always has a semantic reason; the speaker "wants to stress, hyperbolically, the property in question, and his own emotional reaction to it; he wants to exaggerate that property, and to show that in his eyes it looms so large that it determines his way of seeing the referent, to the exclusion of other properties" (Wierzbicka 1986: 365). Quality nouns are such unprototypical NPs that they can hardly be used for object reference (350a); on the other hand, they can be graded and intensified like adjectives (350b, b') (Bolinger 1980: 3).[192]

(350) a. ?The liar/fool sat down. (from Wierzbicka 1986: 364)
b. X is a greater hero/saint than Y. (from Wierzbicka 1986: 375)
b'. Mary is such an angel!/ What an idiot John is!

The following sentences illustrate some of the quality nouns that are typically found in qualifying patterns (351).

(351) a. Not for another two decades was his great work finished, and then only because a local artist, Bramantino, used his own cash to do it, believing the work to be **a masterpiece** (BNC ANB: 966).
b. Finally, rebleeding from a previously missed and non-treated ulcer was considered **a failure** (BNC HWT: 237).
c. Moreover, he finds it **a nuisance** to have her in his flat all day (BNC CA6: 1684).
d. [S]laves who have learned to **regard** their existence as **an injustice** will look for a terrible vengeance (BNC H0N: 1319).

[192] Similarly, when adjectives are used in a function typically performed by nouns (property reference), they assume the categorising behaviour of nouns; as a consequence, they no longer denote a single property but suggest more denotational and connotational features (Wierzbicka 1986: 362): *the young*, *blacks*, *innocence* etc.

Noun phrases that are neither premodified by an adjective nor constitute quality nouns are rare in the NON-FINITE Opinion Construction and the bare QUALIFYING Construction after *consider* (352a, b), and are practically nonexistent after *find*. On the other hand, they are typical of the *AS*-QUALIFYING Construction (352c).

(352) a. Along with other footballers ... he felt a kind of mild predestination, believing himself to be **a footballer** even while at school (BNC CL1: 1644).
b. The fact that Murphy considers himself first and foremost **a businessman** who happens to be in PR ... (BNC K59: 1107).
c. John regards him as **Saviour of the world** (BNC CCL: 617).

Table 35 gives an overview of the formal types of NP found in the various qualifying constructions. While the NON-FINITE Opinion and the bare QUALIFYING Constructions are dominated by premodified NPs or quality nouns, the *AS*-QUALIFYING Construction distinguishes itself by a great proportion of unmodified NPs.

Table 35: Kinds of predicative NPs in qualifying patterns

	adjective + indefinite NP	**adjective + definite NP**	**superlative + NP**	**'quality' NP**	**unmodified NP**
	'adjectival' NPs				
believe NP inf NP (active) *n*=103	45	5	10	18	25
	75.7%				**24.3%**
consider NP NP *n*=310	117	31	15	93	52
	82.6%				**16.8%**
find NP NP *n*=64	36	3	2	23	0
	100%				**0%**
regard NP *as* NP *n*=775	141	43	37	94	460
	40.6%				**59.4%**

An unmodified predicative noun, particularly one introduced by *as*, does not denote a single property like more 'adjectival' nouns, but opens a multidimensional cognitive file like the TOPIC NP. In the *AS*-QUALIFYING Construction, therefore, a relation is established between the image evoked by the TOPIC NP and the image evoked by the predicative NP. It is a general property of human thought to establish connections between different cognitive domains, even between domains that are not *a priori* closely connected (Sweetser and Fauconnier 1996: 4). In a cross-domain or analogical mapping, the structure of one domain, the source domain,

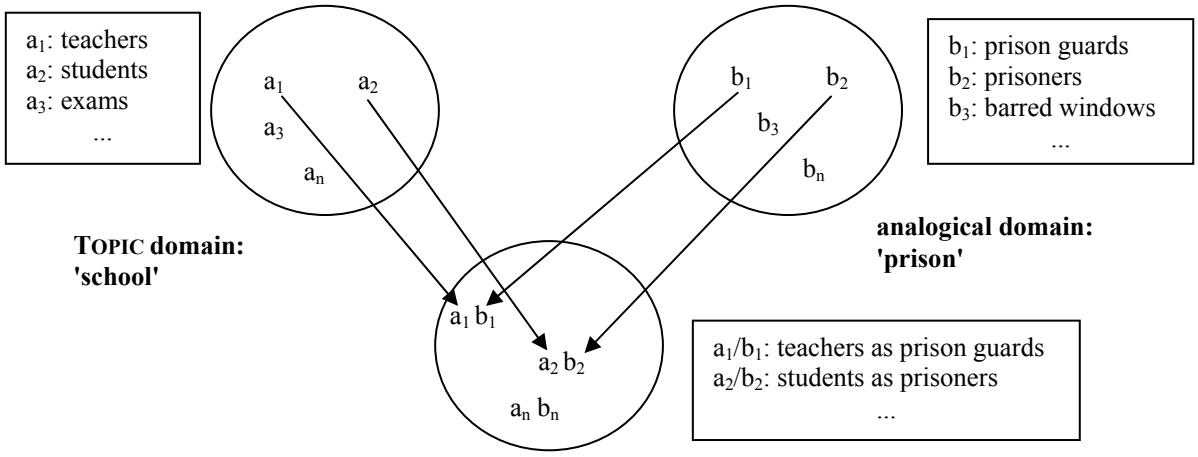
is projected onto another domain, the target domain: "Analogies can inventively induce us to construct new connections, and recast or tune others" (Turner 1991: 125). Such analogical mapping thus makes it possible to "evoke[.] an understanding of one domain in terms of the other" (Sweetser and Fauconnier 1996: 4). With regard to the *AS*-QUALIFYING Construction, the cognitive file opened by the TOPIC NP is the target domain, while the file opened by the predicative NP introduced by *as* is the source or analogical domain. The analogical domain is superimposed on the TOPIC domain, with the consequence that schemata and frames associated with the analogical domain are freely transferred into the TOPIC domain. This is a maximally economical way to gain a fresh understanding of the TOPIC NP; thus, "significant and rich meaning is obtained at very little cost" (Sweetser and Fauconnier 1996: 21). The result of the cross-domain mapping is a blend, which "consists in integrating partial structures from two separate domains into a single structure with emergent properties within a third domain" (Fauconnier 1997: 22). The following sentence nicely illustrates these emergent properties because the analogy established in the blend serves as the basis for further analogical reasoning processes:

(353) If one thinks of **the DNA codes for proteins** as **records in a jukebox**, the problem is to understand why **one disc**, say the haemoglobin **theme**, is **played** only in red blood cells while another, the albumin **theme**, is **played** only in liver cells (ASL: 1119).

AS-QUALIFYING sentences are dominated by predicative NPs rather than APs because they do not typically characterise the TOPIC NP with respect to a single property, but with respect to an analogical domain. Since a noun opens a cognitive file that includes a whole bundle of features and characteristics and not just a single property, "there is more in a noun than meets the eye; there is more in a noun than there is in an adjective" (Wierzbicka 1986: 380). Figure 30 provides a formal representation of the cross-domain mapping effected by the qualifying sentence *John regards school as a prison*: the TOPIC NP *school* opens a cognitive file that contains all of the denotational and connotational background knowledge associated with the referent of that NP (indicated by the subindexed a's). The analogical NP *a prison* opens a second file and evokes a multidimensional image associated with that NP (indicated by the subindexed b's). Some of the features of the TOPIC and analogical domains get mapped onto the blend, which in our example represents the image 'school as a prison'. As a consequence of this mapping, the TOPIC NP has inherited some of the denotational and connotational features of the analogical domain and can therefore be partially understood in terms of that domain. It is not possible to predict, in a way that generalises over specific speakers and specific situations, which aspects of the two domains will be mapped onto one another in the blend: "a striking feature of the blended construction is its underspecification ... there is no recipe for

knowing what will be projected from the inputs" (Fauconnier 1997: 162). The 'school as a prison'-blend will probably not inherit elements such as schoolbooks, exams or blackboards from the TOPIC domain, or aspects such as probation, prison wall or barred windows from the analogical domain, but it could well be that for some speakers the blend also contains an association between the school's headmaster and the prison governor, or between the school yard and the prison yard.

Figure 29: Cross-domain mapping in the *AS*-QUALIFYING Construction (*John regards school as a prison*)



As is consequently much more than simply a semantically empty structural device (cf. 5.3); while it has a "unity-fractioning" function (Schneider 1997: 38) in the DEPICTIVE Construction (cf. 10.3.2), it has an analogical-mapping function in the *AS*-QUALIFYING Construction. Although analogical cross-domain mapping "might seem like improbable mental acrobatics", it is in fact "the stuff of our everyday thinking and talking" (Sweetser and Fauconnier 1996: 21), and it is such a deeply ingrained mental organising principle that "we are typically not conscious of the mapping during use" (Fauconnier 1997: 9). Frequently, a more abstract or unfamiliar domain is seen in terms of a more concrete or familiar domain (354a, a') because "patterns that are inherently meaningful can be present in other concepts, such as abstract concepts, whose meaningfulness is given to them by the inherently meaningful concepts" (Turner 1991: 46), but it is also possible that both domains have a similar degree of abstraction (354b, b'). Very often, it is the positive or negative connotations associated with the analogical domain that are exploited for the cross-domain mapping (354c, c'). What is important is that discourse participants can recognise certain analogies between the two domains; otherwise, the mapping becomes infelicitous (354d).

(354) a. Consider **each impasse** that you meet as **a stepping stone** along the path to eventual happiness and fulfilment (BNC CBC: 4507).

a'. Socioecology regards **the plants** as **the work**, **the herbivores** as **the workers**, and **the carnivores** as **the management** (BNC HCK: 10).
b. One could regard **the front of the sweater** as a **canvas** (BNC CGW: 996).
b'. And erm she always thought of **her husband** as **daddy** (BNC KB8: 4796).
c. **Mrs Thatcher**, however, has remained a mobilizer; she clearly regards **herself** as **Heath plus**, providing greater political will and persistence (BNC A6F: 944).
c'. Most **farm animals**, however, still endure conditions devised in days when **they** were merely thought of as **meat machines** (BNC H06: 1651).
d. ??John regards **school** as **an apple**.

The following table exemplifies a number of typical cross-domain mappings effected by the *As*-QUALIFYING Construction with *regard*:

Table 36: Cross-domain mappings in the *AS*-QUALIFYING Construction

TOPIC domain (target)	**Analogical domain (source)**	**BNC code**
work	service to Christ	CGE: 1796
society	a gigantic market place	A6F: 1021
marriage	a quest for his or her self-fulfilment	CGE: 2445
the health service	some enormous trade union	ABU: 1134
the Church	a rescue post from the world	CCL: 573
her life with the handsome doctor	a game with rules	CCM: 1876
their property in a high-priced housing area	a 'nest-egg' for their retirement	CHS: 960
a town	a machine to live in	ADX: 1851
her existential pain	a cup of instant coffee to be sweetened with saccharin	AEA: 1576
the call of the Killer whale	a dinner gong	BMY: 1123
the earth	a living, breathing entity	CB9: 632
women writers	pilgrims on the way to modern feminism	AN4: 730
her job	an oasis in a desert of coping with Harry's lack of direction	B3G: 387
the New Testament	a stormy sea in which he was tossed about in a little boat as he explored	A68: 701
the asylum	Hades	CFX: 964
the priest at the Eucharist	'a specific and bodily reminder' of Jesus	AT9: 262
their house	home	B03: 1455
the illness	sin made manifest in bone	ADA: 79
Moran's work	voluntary slavery	A6N: 1749
his flock	his children	ALK: 373
the lobby	their own personal fiefdom	AJY: 1688

The relationship between the two domains is also frequently more closely specified by a prepositional expression. The sentences in (355) illustrate some of the prepositional phrases that occur repeatedly in *regard*-type qualifying sentences, such as *an example of*, *a part of*, *one of*, *a sign of* and *a source of*.

(355) a. It is perhaps a technical point whether we regard **this work** — with its fragmented associations and obscure, perverse and personalised allusions, as **an example of schizophrenic language** or, as Brain argues, **evidence of manic flight of ideas** (BNC CFX: 1175).
b. Even **a letter to the Police Review** can be regarded as **a form of indiscipline** (BNC A0K: 394).
c. I regard **humour** as **one of life's vital ingredients** (BNC CKW: 1128).
d. Now the receipt of unsolicited junk mail may seem a relatively trivial matter (though for some, who seem to regard **their letter-box** as **part of their person**, it is an affront) (BNC BNE: 720).
e. Firstly, **Hitler** was regarded as **the personification of the nation** (BNC ADD:

1063).

f. **The wealth and power he clearly possesses** by the time he is reunited with his brother would have been regarded by the writer and the first hearers of the story as **clear signs of God's blessing** (BNC ACG: 997).
g. It was an easy step from this type of attitude to regard **women** as **the source of all evil in the world** (BNC ACL: 466).
h. Charlemagne's throne ... gave all the kings of western Europe sooner or later the idea of regarding **a throne** as **an essential symbol of royal greatness** (BNC BMV: 1281).

While analogical meanings cannot be rendered by adjectives, the meaning of the premodified NPs and quality nouns in the various qualifying patterns is similar to that of the respective adjectives. Most predicative NPs in the NON-FINITE OPINION Construction are characterising (356a), and a minority has evaluative semantics (356b); since characterisation can also be effected by NPs, the rather high proportion of predicative NPs in this construction can be accounted for.

(356) a. I believe the 'Express' to be **a poem of great beauty** (BNC HD8: 108).
b. The problems began when Mr Major and Northern Ireland Secretary of State Tom King, negotiated what they believed to be **the best deal for the taxpayers** (BNC K2F: 1085).

For the bare QUALIFYING Construction with *consider*, characterising (357a) and evaluative (357b) predicative NPs are equally common, while subjective-response NPs are very rare (357c).

(357) a. This is especially likely since evolution is considered **a very conservative process** (BNC CMH: 430).
b. Root crops were of great significance only in Speyside where 83% of the farmers considered turnips **an important ingredient** in winter stock diets (BNC ALC: 188).
c. It was not considered **an easy or even feasible task** to prove this relationship (BNC B0N: 336).

Although analogical mapping is a prime function of the *AS*-QUALIFYING Construction, not all sentences with *regard*-type verbs express analogical mappings (cf. the sentences with predicative adjectives). There is a broad semantic overlap with the bare QUALIFYING Construction with *consider*-type verbs; as in this construction, the predicative NPs in the *AS*-QUALIFYING Construction frequently have characterising (358a) and evaluative (356b), but only rarely subjective-response semantics (358c).

(358) a. Was he in general, would you say, well-liked, regarded as **a competent priest**? (BNC HA2: 1913).
b. Independent soft-commission brokers regard it as **an acceptable method of payment** so long as they deal at the best price (BNC AHB: 241).
c. Much may hinge upon points that the typical executive might understandably regard as **irritating technicalities** (BNC B08: 1973).

Predicative NPs in QUALIFYING sentences with *find* also sometimes have a characterising (359a) or evaluative (359b) meaning, but most typically express emotional or intellectual reactions of the SUBJECT towards the TOPIC (359c). Since NPs are not well suited to the task of

denoting subjective responses, predicative nouns are significantly underrepresented in qualifying sentences with *find*.

(359) a. [T]he young men were away fighting most of the time and the older ones found it **slow work** reaping by moonlight (BNC CM7: 2369).
b. Purists will argue that the additional contributions purchase additional benefits but many will not find this **a good point** (BNC HXB: 1466).
c. She explodes in a verbal attack on Trevor which momentarily he finds **quite a relief** (BNC CGE: 668).

A final word on predicative prepositional phrases: PPs rarely occur as predicative phrases in qualifying patterns because they are not typically used to express properties, but to establish a relation with another entity. When they occupy the XP-slot of a qualifying pattern, they must shift towards an 'adjectival' meaning like premodified NPs and quality nouns. Predicative PPs typically take on evaluative (360a), characterising (360b) or subjective-response (360c) semantics like predicative adjectives.

(360) a. After killing the 'man', they apparently considered the woman **of little importance** (BNC B20: 2665).
b. So, though there are no stars in your eyes, you consider yourself **beyond temptation**? (BNC JXT: 749).
c. [T]hose who admire warm analogue sound will find this disc **wholly to their taste** (BNC ED6: 3347).

11.4.7 Overview of syntactic and stylistic differences

The following table gives a synopsis of the syntactic and stylistic differences between the four functionally related qualifying patterns. *That*-clauses are most sharply set apart from the other patterns because they are the only structure that is able to represent independent propositions. The infinitival pattern differs from NP (*as*) XP-structures in that it is typically found after passive matrix verbs and is rather formal; the PASSIVE-OF-OPINION Construction is functionally a passive version of the FINITE OPINION Construction, and the formality of the active NON-FINITE OPINION Construction is due to the fact that it expresses rational judgements that are based on the SUBJECT's long-standing experience with the TOPIC — a relationship that is typical of scientific contexts. The bare QUALIFYING Construction distinguishes itself by its frequent occurrence in imaginative texts and by the typical categorial realisation of XP as AP; it is typically used when the TOPIC is characterised or evaluated in a personal and idiosyncratic way. The *AS*-QUALIFYING Construction, on the other hand, exhibits a great proportion of NPs in the XP-slot because it is predominantly used when the TOPIC NP is to be seen in terms of another, analogical domain.

Table 37: Overview of the syntactic and stylistic differences between qualifying patterns

	***that*-clause**	**NP inf XP**	**NP XP**	**NP *as* XP**
Complexity	variable	low	low	low
Independent modification	possible	hardly possible	not possible	not possible
Tense/aspect variability	high	low	none	low
Extraction of 'subject' NP	rare	frequent	frequent	frequent
Voice of matrix verb	typically active	typically passive	neutral or typically active	neutral
Categorial realisation of XP	neutral between AP/NP	neutral between AP/NP	typically AP	typically NP
Style	neutral or rather colloquial	rather formal	frequent in imaginative texts	neutral

12. Conclusions

Secondary-predicate constructions that follow the syntactic formula 'NP_1 V NP_2 XP' present a complex range of scholarly conundrums and have therefore proved a rich hunting ground for various syntactic theories. There are four major lines of analysis which have attempted to clarify the problems posed by these constructions, each of them comprising a plethora of slightly differing subanalyses.

Descriptive grammars analyse the [NP_1 V NP_2 XP]-pattern, which they usually call a 'complex-transitive' complementation structure, on the matrix of transitive and copula clauses. In this view, NP_2 is equivalent to the direct object of ordinary transitive sentences, and XP can be likened to the postverbal complement of copula clauses. This ternary analysis, in which the main verb selects a subject, a direct object and what is widely known as a 'predicative complement', runs into serious difficulties, though, because it cannot account for the predicative relationship holding between the two postverbal complements. Attempts to remedy the situation by positing a hidden copula between NP_2 and XP or by claiming that the matrix verb possesses some kind of intensive subcategorisation frame force the abandonment of the syntactic distinctions descriptive grammars rely on: NP_2 would be both the direct object of the matrix verb and the subject of the predicative complement; XP would be an argument with respect to the main verb, but a predicate with respect to NP_2; finally, the main verb would be bivalent and trivalent at the same time, with the consequence that the complex-transitive pattern would be both monoclausal and biclausal.

The predicative relationship between NP_2 and XP is the linchpin of the SC-analysis, which regards NP_2 as the subject and XP as the (primary) predicate of a verbless clause. The scholarship on SCs is dominated by theoretical considerations deriving from various subtheories of generative grammar, such as the Theta Criterion, the Projection Principle and the binary-branching requirement. The empirical arguments put forward in favour of the claim that the main verb selects a subordinate clause are largely unconvincing, and there is also abundant evidence showing that NP_2 and XP behave like two separate, non-clausal constituents, with NP_2 acting more like a direct object than a subject.

The complex-predicate analysis, which has been formalised in generative and Categorial-Grammar frameworks, avoids the difficulties of SC-theory by treating NP_2 and XP as two separate constituents again. The predicative relationship obtaining between these two phrases is attributed to the fact that the main verb and XP form a complex predicate, which selects NP_2 as its direct-object argument. The empirical basis of this line of inquiry is rather tenuous, though,

because neither the word-order facts nor the semantics of secondary-predicate constructions support the view that the main verb and XP form a syntactic and semantic complex. Both generative and Categorial-Grammar approaches need to invoke special transformations or rules of combination to rectify this problem.

The fourth contender for the correct analysis of secondary-predicate constructions, Predication theory, treats NP_2 in a sentence such as *John drank the tea hot* as a direct object of the main verb, and the XP as a secondary predicate that is licensed by the argument complex of the primary predicate. Although a licensing account can circumvent many of the difficulties besetting the other theories — the main verb does not need to select another predicate, and the predicative relationship between the two postverbal phrases need not be instantiated by a clause — it has proved almost impossible to triangulate adequate structural licensing conditions.

Apart from the predicative relationship holding between NP_2 and XP, there is the additional problem of how to account for the different semantic relationships that can be conveyed by secondary-predicate constructions. Even though the four syntactic approaches differ from one another on this question as well, answers have frequently gravitated towards a complement/adjunct account: qualifying sentences are most often argued to constitute a complement structure, with the direct object and the predicative complement (or the SC) being selected by the main verb, while depictive sentences seem to be adjunct structures in the sense that NP_2 is selected by the verb, whereas XP (or a SC with a PRO-subject) constitutes an adjunct. Resultative sentences have received heterogeneous analyses because resultative XPs straddle the complement/adjunct distinction. In addition, there have also been attempts to capture the different semantic relationships by combining existing analyses, such as suggesting a complex-predicate analysis for qualifying and resultative sentences, and a licensing account for depictive patterns.

The reason why none of the four competing lines of analysis has produced any definitive results so far lies in the principles that have guided research within the paradigm of syntactic discreteness. Complex syntactic structures such as the [NP_1 V NP_2 XP]-pattern are thought to be assembled out of smaller, discrete parts according to certain rules of combination. This bottom-up approach crucially relies on the distributional method in order to identify syntactic primitives; as the discussion of secondary-predicate constructions has shown, however, the distribution of grammatical properties is skewed, and every postulated syntactic building block is confronted with a large number of distributional mismatches. In order to defend their analyses, discrete research agendas become susceptible to what Croft has criticised as 'meth-

odological opportunism': those grammatical properties that support a given theory are allowed to hold sway to the exclusion of other properties, which tend to be omitted from the scope of linguistic description. Multistratal grammars have yet another way of coming to terms with distributional mismatches: conflicting evidence can be explained away if it is assumed that a discrete analysis holds true at a deeper syntactic level, and that mismatches are surface-structure reflexes of independent grammatical principles. As the fruitless quest for the right D-structure representation of SCs in generative grammar has illustrated, however, such an approach is no longer amenable to empirical testing.

If we do not want to dilute the results of the distributional method in order to uphold theoretical preconceptions, we must renounce the idea of cross-constructional syntactic building blocks such as 'predicative complement', 'small clause', 'complex predicate' or 'symmetrical c-command'. It consequently becomes a moot question to ask which of the discrete analyses of the [NP_1 V NP_2 XP]-pattern is superior to the others because it is impossible to find incontrovertible empirical evidence for any of them. For this reason, the chimera of the 'right' syntactic analysis should be given up in favour of a more holistic and functional approach to secondary-predicate constructions. The perspective of non-discrete grammar calls for a fresh understanding of syntactic and semantic phenomena by arguing that constructions, and not the elements and relations they contain, are the proper units of syntactic representation. Since Construction grammar begins with the larger units and defines their constituents merely with respect to the role they play within the larger construct, it eschews the principle of full compositionality not only for idioms, but for all syntactic constructions. Construction grammarians postulate a continuum between the lexicon and syntax because both words and constructions are partly arbitrary pairings of form and meaning; symbolic relations are thus internal to constructions and do not exist cross-constructionally. There is a bi-directional, associative relationship between semantically related words and constructions, rather than a bottom-up integration of words into the syntactic structures provided by a categorial component. This connectionist perspective is also broadly consonant with the multidirectional and amodal views taken by recent neuroscientific models.

When syntax and semantics are so intimately entwined, it is impossible to provide intersystemically discrete syntactic or semantic analyses of constructions. Syntactic form must be seen as a reflection of the specific semantic functions a given construction fulfils. Since the [NP_1 V NP_2 XP]-pattern can convey at least three different semantic relationships, we must assume that it codes at least three distinct constructions. This approach cuts through many of the knots of discrete syntax because it is no longer necessary to force a similar kind of complex-

transitive or small-clause analysis on all secondary-predicate constructions, and it also allows us to avoid the reductive binarism of complement/adjunct accounts. Each of the three semantically distinct secondary-predicate constructions must rather be described in its own terms.

The prototypical RESULTATIVE Construction codes an event in which one entity, a mental initiator, acts on another entity, a physical endpoint, thereby changing it in one of its properties. This force-dynamic model helps to account for most of the constraints governing the roles of the RC: the VERB-slot must be filled by a dynamic verb that can direct its force onto a specific property dimension of the endpoint; the SUBJECT hosts an initiator who translates his or her will into physical force, and the OBJECT an endpoint that can manifest a new property as a result of the force transmitted onto it; the attribute denoted by the RESULTATIVE phrase must be compatible with the property dimension activated by the VERB and with the direction of force transmission.

The DEPICTIVE Construction conceptualises a figure/ground relationship in which a salient property stands out from an event; the figure property and the ground event are indirectly related to each other via an entity that is both a participant in the event and the bearer of the property. The figure/ground asymmetry explains many of the peculiarities of depictive sentences: the ground event must be dynamic or at least compatible with the idea of variable instantiations, so that a figure property can be conceived of as exceptionally standing out from it; to effect an ideal figure/ground relationship, there may be at most one figure in the event, the participant that serves as reference point for the figure must play a central role in the event as initiator or endpoint, and the figure must denote an absolute property.

In contrast to the RC and the DC, the QUALIFYING Construction conceptualises a stative relationship between a SUBJECT-entity and a TOPIC-entity, which can be modelled along the lines of Fauconnier's mental-space theory. On the basis of his or her experience, the SUBJECT has a permanent opinion on the TOPIC, which differs in certain respects from intersubjectively shared knowledge and which is not supposed to float back to the more factual Base Space. Depending on which main verb is used in the construction, the SUBJECT's judgement is presented as personal but rational (e.g. *consider*), or as rather idiosyncratic and unimportant (e.g. *find*).

Constructions are similar to lexical items in many interesting respects. For one thing, they have a prototypical meaning and various extensions from the core. Prospective resultatives (*John ordered the floor cleaned*), conditional depictives (*I prefer tea with milk*) and *describe*-type qualifying sentences (*John values Mary as a competent colleague*) can be interpreted with respect to the constructional prototype, but also show idiosyncratic syntactic and

semantic behaviour. Even more importantly, a construction — like other lexical items — is part of a multidimensional network, so that its meaning cannot be exhaustively characterised without comparing it to the alternative conceptualisations provided by functionally related constructions. Resultative sentences, for example, are tightly connected to MOTION Constructions, in which the force transmitted by the initiator targets the endpoint as a physical entity that can be transposed in space. The DC, which foregrounds a figure property relative to a ground event, can be compared with, for example, the DETACHED DEPICTIVE Construction, in which a property is backgrounded with respect to an event. Finally, the QC forms a functional map with the FINITE OPINION and the NON-FINITE OPINION Constructions: while the Subjective Space is completely closed off from the Base Space in a typical instance of the QC, the other two constructions allow the judgement made on the TOPIC to be partially transferred back into the Base.

Although the problem of how the predicative relationship between NP_2 and XP can be modelled cross-constructionally has been put to rest by the non-discrete approach, the question remains why the RC, the DC and the QC all rely on a secondary predication. The reason seems to be that the entity denoted by the postverbal NP fulfils a double role in all three constructions: the OBJECT-entity in the RC is the endpoint of the force transmitted by the initiator, and it also manifests a new property as a result of this transmission of force; in the DC, the referent of the postverbal NP is both a participant in the ground event and the bearer of the figure property; finally, the QC symbolises a mental relationship between the SUBJECT and the cognitive file opened by the TOPIC NP, which is more closely specified by a property that the TOPIC displays as a result of the SUBJECT's particular views of it.

The present dissertation has tried to analyse secondary-predicate constructions by looking for converging evidence from multiple sources; it has therefore combined such heterogeneous methods and data as syntactic tests, introspection, native-speaker evaluations and corpus investigations. The dictates of practicality have restricted the integration of extensive corpus data to the analysis of the QC; it is perfectly feasible, though, to bring corpus evidence to bear on the RC and the DC as well.

Non-discrete grammar is only just beginning to emerge as a serious alternative to discrete syntax, and there are still a large number of open theoretical issues. A constructional approach does not obviate the need to tackle phenomena which have hitherto been rather successfully described in componential terms, such as general syntactic rules like the passive or adverbial modification (cf. *John is considered a fool*; *Mary wiped the table clean with a sponge*). Whether it is possible to assume combinations of constructions (e.g. a combination of the

QUALIFYING Construction with a schematic PASSIVE Construction), or whether constructional and componential approaches could profitably be combined, is a question that will have to be addressed by future research (Hoffmann and Saurenbach, in progress).

Although it is customary and, I think, innocuous to describe linguistic phenomena with respect to an idealised language such as 'English', Construction grammar can also be used as a powerful tool to compare functional maps of constructions across different varieties of one language, and of tracing the development of such maps in the history of a language. It is the long-range goal of non-discrete grammar to augment our knowledge of the way linguistic patterns are functionally organised, and of how and why such functional organisations can vary and change.

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